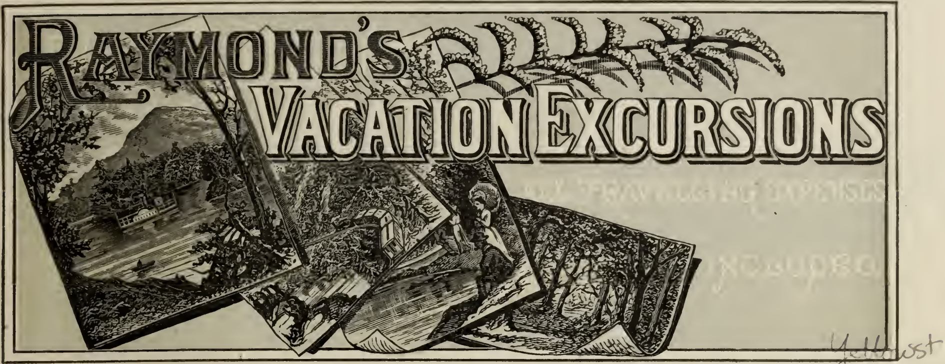

RAYMOND'S VACATION EXCURSIONS

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FIVE GRAND TRIPS

TO THE

YELLOWSTONE NATIONAL PARK

Leaving Boston July 17 and 31, August 14 and 28,
and September 11, 1890.

W. RAYMOND, I. A. WHITCOMB,
296 WASHINGTON STREET (opposite School St.), BOSTON, MASS.

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SEASON OF 1890.

FIVE GRAND TOURS

THROUGH THE

YELLOWSTONE NATIONAL PARK,

With a Complete Round of all the Points of Interest in

AMERICA'S WONDERLAND,

And ample time for a thorough inspection of its many marvels. Incidental visits to ST. PAUL, MINNEAPOLIS, NIAGARA FALLS, Etc.

DATES OF DEPARTURE AND RETURN.

FIRST PARTY.—Leave Boston Thursday, July 17; Return Tuesday, Aug. 5.
SECOND PARTY.—Leave Boston Thursday, July 31; Return Tuesday, Aug. 19.
THIRD PARTY.—Leave Boston Thursday, Aug. 14; Return Tuesday, Sept. 2.
FOURTH PARTY.—Leave Boston Thursday, Aug. 28; Return Tuesday, Sept. 16.
FIFTH PARTY.—Leave Boston Thursday, Sept. 11; Return Tuesday, Sept. 30.

PRICE OF TICKETS (all traveling expenses included), $225.00.

In connection with the September Excursion

A GRAND TRANSCONTINENTAL TOUR OF SIXTY-EIGHT DAYS,

Embracing Montana, Idaho, Washington, the Puget Sound Country, Oregon, the Picturesque Mount Shasta Route, California, Arizona, New Mexico, Colorado, Etc.

PRICE OF TICKETS (all traveling expenses included), $535.00.

W. RAYMOND, I. A. WHITCOMB,
296 WASHINGTON ST. (OPPOSITE SCHOOL ST.), BOSTON, MASS.

AMERICAN PRINTING & ENGRAVING CO., 50 ARCH ST., BOSTON.

FIVE EXCURSIONS

TO THE

YELLOWSTONE NATIONAL PARK,

1890.—SIXTH YEAR.

July 17 to August 5; July 31 to August 19; August 14 to September 2; August 28 to September 16; and September 11 to September 30.

THE Yellowstone National Park is a region full of natural wonders, of which explorers and travelers have told the world something; yet nothing short of a personal visit can serve to aid the mind in a comprehension of its marvels.

Language is feeble before the majesty and beauty of the Grand Cañon of the Yellowstone, flecked with all the colors of a gorgeous sunset; the mysterious loveliness of the springs, which have carved for themselves fonts of the most exquisite form and finish; and, above all, before the gigantic geysers, huge fountains of hot water which cast their steaming columns hundreds of feet into the air. Words which have served to ennoble lesser objects are weak and ineffectual in describing such a vast collection of marvels. A distinguished writer, in speaking of the country embraced in the park, says: "It is a region of wonder, terror, and delight. Nature puts forth all her powers, and her moods are ever changing from grave to gay, from lively to severe.

Here tremendous geysers shoot up their mighty fountains, causing the earth to tremble by their violence; countless hot springs, indescribable in their strange beauty, show depths as translucent as the ambient air; pools of seething mud, casting up jets of colored paste, bewilder by their curious activity. And as if these were not sufficient, here, too, is to be seen the most varied and lavish display of picturesque scenery. The park unfolds a succession of pictures, each more striking than the other. There are serried, snow-mantled mountains, profound cañons, mighty cataracts, verdant valleys, beautiful woods, sylvan streams, foaming cascades, and mirror-like lakes." Says M. M. Ballou in his latest book of travels, *The New Eldorado:* "Of all those who have endeavored to depict this locality, none have been able to convey with the pen an adequate idea of its wild magnificence, or to give a satisfactory description of its accumulated wonders. The eye alone can appreciate its indescribable beauty, majesty, and loveliness." The entire region was, at a comparatively recent geological period, the scene of remarkable volcanic activity, the last stages of which are still visible in the hot springs and geysers. In the number and magnitude of these, the park surpasses all the rest of the world. There are probably fifty geysers throwing columns of water to the height of 50 to 200 feet.

It was not until very recently that the Yellowstone National Park was made fairly accessible to tourist travel. Even after the railroad had reached the borders of the park, traveling within the vast domain was difficult on account of the insufficiency of the government appropriations to provide roads or trails. Under such circumstances we declined to take tourist parties to the park, although urged to do so for several years, feeling that even all its wonders would not compensate the traveler for discomforts he must inevitably encounter. Under the able direction of officers of the United States Engineer Corps, new roads and bridges were constructed; and the opening of hotels and fixed camps at the chief centres of interest likewise contributed to the comfort of the traveler. In view of the great progress made in both directions, we were induced in the summer of 1885 to organize two excursion parties, of limited numbers, for a round of the park. These were planned with a liberal allowance of time, twice the number of days being allotted to the park than tourists generally were accustomed to give themselves. This secured time for rest as well as for sight-seeing, and the incidental journeys were rendered much less fatiguing than would have been the case if they had been crowded together with but slight intervals of sojourn by the way. These tours were carried out in the most satisfactory manner, as many well-known residents of the East can attest. In the four succeeding years, the trips were repeated with equally gratifying results. Our excursions this year — the sixth season of our Yellowstone National Park tours — are sure to prove still more enjoyable to the participants. Important improvements have been carried out within the park during the past few years, tending to make the journeys from point to point more comfortable, and the sojourns at all the chief centres of attraction more satisfactory. The roads have been shortened and improved, and much more sight-seeing can be accomplished in a given time than formerly. The hotel service is under very excellent management. A thoroughly responsible party of capitalists took charge of this latter feature a few years ago, and every means has been taken to meet the demands of increased travel. New buildings were erected and old ones enlarged. This change conduced largely to the comfort of tourists. A new hotel at the Yellowstone Grand Cañon has been completed, and another has been built at the outlet of Yellowstone Lake. The transportation facilities (under the direction of Mr. George W. Wakefield) have also been put in the best condition, and the stage journeys are made with entire safety and comfort.

We have made a radical change in our park tours by devoting all available time to the park region, and lessening the time formerly spent upon the way thither. This enables us to greatly reduce the price of the excursion. This does not mean any abridgement of the essential part of the trip — the park portion. Indeed, as already explained, the tour is made more comprehensive than ever, the beautiful Yellowstone Lake being added to the list of points to be visited. An entire week will be passed within the park. This is a longer time than is usually taken by visitors, and affords opportunity, not only for more thorough sight-seeing, more extended exploration, and a more intelligent study of the marvelous phenomena of the geysers and springs, but also for rest, which becomes an important consideration in a tour of this nature. In this connection it should be said that the expenses of traveling and sojourning within the park are necessarily high. In view of this fact, it would have been an easy matter to cut down the time, in order to lessen the expense; but we have deemed such a course prejudicial to the best interests of our patrons, and, in place of curtailing the expenditures in that particular, have made the trip a complete one, feeling that the extra days will be fully appreciated.

While the time of the journeys to and from the park has been lessened, the trip is in no sense a hurried one. The outward journey is broken by a sojourn over Sunday at St. Paul or Minneapolis, and the homeward one by a visit to Niagara Falls, and also by a brief stay in Chicago. As the return tickets are good for independent use, passengers can stop at any other points desired. All railway travel will be in palace sleeping and drawing-room cars. Every person will be entitled to a double berth in the sleeping-cars (half a section). This gives four seats by day for every two persons. The cost of an extra double berth (a whole section for one person) from Boston back to Boston will be $29.

The journeys through the park — from Cinnabar to Mammoth Hot Springs, from the Springs to the Upper Geyser Basin, thence to Yellowstone Lake and the Yellowstone Cañon, and back to Mammoth Hot Springs and Cinnabar — will be made in comfortable spring wagons. There are hotels at all the points where halts are to be made for the night. It is no longer necessary to depend upon the primitive accommodations of the "camps." The several hotels are under admirable management, and cooks and servants are employed to furnish meals; so that the traveler has no need to provide himself with either camping or cooking outfits.

The Yellowstone National Park tour may now be made safely and with entire comfort, and, with time at command for the round of stage rides to be taken in a leisurely way, as in these excursions, it becomes one of the grandest, as well as one of the most novel, experiences known to the world of travel. It will readily be seen that the excursions have been planned upon a very liberal scale, and that nothing has been omitted that can contribute to their success.

From Boston to Chicago.

The route of the excursion from Boston westward lies over the popular Hoosac Tunnel and West Shore lines. The parties will leave the Fitchburg Railroad station, on Causeway street, Thursdays, July 17 and 31, August 14 and 28, and September 11, at 8.30 A. M. There will be a daylight ride through Central and Northwestern Massachusetts, and also through a large part of Central New York. From Suspension Bridge the route lies over the Great Western Division of the Grand Trunk Railway *via* Hamilton and London, through a pleasant part of Ontario Province to Point Edward, near Sarnia, where the cars are ferried across the St. Clair River to Fort Gratiot, near Port Huron. A tunnel is being constructed under the river, and the ferry will be dispensed with upon its completion. From this point to Chicago, we travel over the Chicago & Grand Trunk Railway, which takes us through Southern Michigan and little corners of Indiana and Illinois.

From Chicago to St. Paul and Minneapolis.

Arriving in Chicago Friday evening, the parties will make only a brief stay in that city, the train departing from the Union station (on Canal street between West Madison and West Adams streets), over the line of the Chicago, Milwaukee & St. Paul Railway, at 11.00 P. M. This road is one of the great arteries of travel and commerce through the Northwest, and, with its many divisions and branches, covers large parts of Illinois, Wisconsin, Iowa, Minnesota, and Dakota like the bars of a gridiron. The main northwestern line, extending through Milwaukee and La Crosse, and from the latter city up the picturesque banks of the Mississippi to St. Paul and Minneapolis, is the one we are to traverse. The southeastern section of Wisconsin will be passed through in the night, and the early morning will find us journeying through the pleasant stretch of country lying east of the Mississippi River, and extending through the counties of Juneau, Moreau, and La Crosse.

The Attractions of the Upper Mississippi.

La Crosse, a pretty city of about 20,000 inhabitants, will be reached shortly before 9.00 A. M. The city has considerable river business, as well as a jobbing trade with the valleys of the Black and Chippewa Rivers. The site of the place is said to have been a great ball-playing ground of the Indians, and the name is the same that was applied by the early French *voyageurs* to the Indian game.

At La Crosse the railroad crosses the Mississippi River and enters the State of Minnesota. For upwards of 100 miles — as far north as Hastings — it follows the west bank of the " Father of Waters," and brings into view much beautiful scenery. The valley is from three to five miles wide, and the river is studded with green islands. The bluffs, in many instances over 600 feet high, assume a bolder aspect as the traveler proceeds northward; and in some cases they rise abruptly from the river's brink, leaving barely a shelf for the railway to rest upon. Queen's Bluff, an eminence in pyramidal form, is on the west side of the river just below Richmond. Trempeleau, a contraction of the name bestowed by the early French *voyageurs*, and meaning literally the mountain which dips in the water, is an island in the river a short distance above Richmond. Cabin Bluff and many other eminences are seen, and near the city of Winona — a place of 14,000 inhabitants on the river shore — are several bold and striking elevations, including Castle Rock and Sugar Loaf. There are, in fact, two mountains of the latter name, or halves of mountains, on opposite sides of the river; and an Indian legend tells us that two deities quarreled over the possession of the mound, which originally stood on the east shore, and that one removed his half across the Mississippi to its present position. It is along the shores of Lake Pepin, however, that the scenery is most picturesque. The river here expands to a width of from three to five miles, and for twenty-five miles from the mouth of the Chippewa River northward, nearly to Red Wing, presents a succession of lovely views. A grand amphitheatre of bluffs seems to inclose the lake, one of the most prominent elevations being known as Maiden Rock. This is situated on the east bank nearly opposite Frontenac, and is the place where Winona, a fair damsel of the Dakota or Sioux tribe, is said to have destroyed herself on account of disappointed love. Wabasha, which is upon the line of the railway and just south of the mouth of the Chippewa, was, as late as 1830, the dwelling-place of the chief of the Sioux. The waters of Lake Pepin are dotted with rafts, sailboats, and steamers; and on its shores are several towns, including Lake

City, Frontenac, Wacouta, and Bay City. Frontenac is a favorite place of summer resort. Near Red Wing is Barn Bluff, a bold eminence in butte form. Red Wing is the chief town of importance after Winona has been passed. At Hastings, a handsome town which lies nearly opposite the mouth of the St. Croix River, the railway recrosses the Mississippi, and for the remainder of the distance to St. Paul, twenty miles, keeps upon the east side. The scenery is here interesting, but far less striking than it is below.

The Twin Cities.

Our train will reach St. Paul at 1.50 P. M. and Minneapolis at 2.35 P. M., and members of our excursion parties can spend Sunday in either city. The two places are only ten miles apart. The magnificent Hotel Ryan, of which Mr. Eugene Mehl is the proprietor, will be our headquarters in St. Paul; and the superb West Hotel, which is owned by Colonel John T. West, will be our sojourning-place in Minneapolis. These two establishments are splendidly appointed, and are among the finest hotels in America.

St. Paul is a city of recent and very rapid growth, although the oldest-settled portion of that empire of the Northwest, Minnesota. It was long an Indian town, and in 1680 was visited by Father Hennepin. In 1766 Jonathan Carver made a treaty with the Dakotas in Carver's Cave. The first white settlement was founded in 1838, and a Catholic mission was called St. Paul's; hence the name of the city. The town was incorporated in 1849, with a population of 400, and the city in 1854, with 4,500 inhabitants. The St. Paul of to-day is a busy community of over 120,000, and is one of the handsomest as well as one of the busiest cities in America. Its wholesale trade amounts to over $72,000,000 a year. It is the capital of the State and the county seat of Ramsey county. Its situation at the head of navigation on the Mississippi River was at the outset greatly in its favor, and the centering here of the great railway systems of the Northwest has given it still greater importance. The opening of the Northern Pacific Railroad for its entire extent six years since was an important event for St. Paul and for its near neighbor, Minneapolis. The headquarters of this great line are located here, and the Northern Pacific Building is one of the chief ornaments to this handsome city. Several other railway lines have their headquarters here; and the Union Depot, foot of Sibley street, which has recently been enlarged, is one of the finest in the country, although much too small to meet increasing demands. The State Capitol is at the intersection of Ninth and Wabasha, the Market House at the corner of Seventh and Wabasha, and the Custom House and Post Office at the corner of Fifth and Wabasha. There are twenty-three schools, including the fine High School, on Tenth street, near the Capitol, and sixty-three churches, several of which are costly and elegant structures. A new County Court House has recently been built. Among the fine business edifices are the *Globe* building and the new *Pioneer Press* block. A stately bridge, built on an incline from the high bluffs of St. Paul, leads to the west side of the Mississippi.

Minneapolis is a city of wonderful growth, and naturally surprises the stranger. Although less than thirty years old, it has a population of over 130,000, and its builders can hardly keep pace with the demands of trade and the calls of new-comers for residences. Its streets and avenues are spacious, and in many instances lined with trees; while its business blocks are among the most substantial and elegant in the country. Its immense manufacturing interests are headed by twenty-three flouring mills, with a daily capacity of 29,000 barrels and an export trade of 1,500,000 barrels per annum, and nineteen lumber mills, which cut 300,000,000 feet of lumber each year. A single flouring mill,—the Pillsbury A,—is capable of turning out over 5,000 barrels of flour a day. Nearly a score of railroads enter the city, and the railroad shops alone employ thousands of men. The Union depot is an elegant building, and several fine railroad bridges span the river. The Suspension Bridge, the chief wagon-way, has a span of 675 feet, and its castle-like towers are 111 feet high. It was completed in 1877. There are thirteen grain elevators. The utilized water-power of the Falls of St. Anthony amounts to 130,000 horse-power at low water-mark. The manufacturing interests aggregate $48,000,000, and over $12,000,000 are expended for buildings annually, while the commerce of the city reaches an aggregate of $125,000,000. A fine system of parks and boulevards is being developed. The Chamber of Commerce and Board of Trade occupy a splendid building corner of Fourth avenue and Third street. The High School is a splendid structure on Fourth avenue south, extending from Eleventh street to Grand street. The Syndicate Block, on Nicollet avenue, and Boston Block, on Hennepin avenue, are two of the handsomest business edifices. There are many other notable buildings, including the New Lumber Exchange, the Post Office, Court House, the Public Library, Masonic Temple, and the Corn Exchange. A handsome and capacious exposition building occupies a commanding site on the east side of the river.

Westward on the Northern Pacific Railroad.

Monday afternoon the westward journey will be resumed, the route lying over the main line of the Northern Pacific Railroad. The train will leave St. Paul at 4.15 P. M. and Minneapolis at 4.55 P. M.

This great transcontinental line has brought within access of the tourist some of the most wonderful regions of the globe, and for its entire distance a country that is attractive and interesting. It traverses Minnesota and those new empires of the Northwest,

—North Dakota and Montana,—and then penetrates the picturesque section of the Northern Pacific Coast. Scattered along its line are natural wonders in the way of lakes, rivers, and mountains, to say nothing of that greatest marvel of all, the Yellowstone National Park. Our western course will take us over this great road for upwards of 1,000 miles. During our transit, meals will be served on board the Northern Pacific Railroad dining-cars.

On leaving St. Paul, we cross the Mississippi River to Minneapolis, and then journey up the banks of the great stream, going first northwest and then north, and passing through a rich and fruitful agricultural region. The surface of the country is diversified by lakes, rivers, and forests of hard wood. Before nightfall the train will pass through Anoka, the county seat of Anoka county and a flourishing place of some 6,000 inhabitants; Itaska; Elk River, county seat of Sherburne county; Sauk Rapids, a town of 1,000 inhabitants and county seat of Benton; and several lesser places. Later on, Little Falls, county seat of Morrison; Verndale; Wadena, county seat of Wadena; Detroit, county seat of Becker; Lake Park; Glyndon, and Moorhead. The flourishing city of Fargo, which confronts Moorhead on the Dakota side of the Red River, and a portion of the great wheat-raising region will be passed in the night, although enough will be seen in the morning hours to afford an insight into the vast extent of wheat farming in Dakota.

North Dakota and the Bonanza Wheat Farms.

The Territory of Dakota possessed the imperial domain of 150,932 square miles—a larger area than any of the other Territories or States of the country except Texas and California. It was about twice as large as all the New England States combined, more than three times the size of New York, nearly four times as large as Ohio, and nearly twice as large as England, Wales, and Scotland together. The population in 1880 was 135,180, and it was estimated to be 450,000 in 1886. In February of last year two new States were created from this great Territory — North Dakota and South Dakota. North Dakota, with an area of 75,000 square miles, through the southern section of which the Northern Pacific Railroad extends, possesses the peculiar soil and natural climatic conditions for the production of hard spring wheat, the kind that is consumed in the great roller flouring mills of Minneapolis. It is said that this wheat cannot be raised south of the Northern Pacific grain belt. The average yield of wheat per acre varies from 16 to 25 bushels in the Red River valley, and from 20 to 30 bushels on the uplands west. From 35 to 40 bushels to the acre, weighing from 61 to 65 pounds to the bushel, is not an unusual yield on the uplands of North Dakota. Seeding begins in March, and August is the harvesting month. Later, after threshing, the whole country is lighted by the burning straw heaps, the farmers vying with each other in making the largest bonfires. The ashes serve to enrich the soil. Prior to 1875 it was declared, upon high army authority, that beyond the Red River the country was not susceptible of cultivation. This sweeping statement gained wide publicity, and caused much hesitation with regard to undertaking the cultivation of the Dakota prairies. Messrs. George W. Cass and Benjamin P. Cheney (the latter of Boston), both heavy capitalists and directors in the railroad company, having faith in the fertility of the land, determined to test its capacity for wheat production. They first bought, near the site of the present town of Casselton, 7,680 acres of land from the railroad company, and then secured the intervening sections of government land with Indian scrip, thus obtaining compact farming grounds of immense area. Mr. Oliver Dalrymple, an experienced wheat farmer, was engaged to manage the property, and in June, 1875, he began the cultivation of 1,280 acres. This has been extended until

30,000 acres are cultivated practically under one management, the area of the three tracts being 75,000 acres. Farming operations are here conducted on a gigantic scale, and yet with the greatest system. The plan adopted by Mr. Dalrymple is to divide the land into tracts of 6,000 acres each, and these are subdivided into farms of 2,000 acres each. Over each 6,000 acres a superintendent is placed, with a book-keeper, head-quarters building, and a storehouse for supplies. Each subdivision of 2,000 acres is under the charge of a foreman, and is provided with a set of buildings, comprising boarding-houses for the hands, stables, a granary, a machinery hall, and a blacksmith's shop,— all connected with the superintendent's office by telephone. On a 20,000-acre tract near Casselton, 400 men are employed in harvesting, and 500 to 600 in threshing. There are also brought into requisition 250 pairs of horses or mules, 200 gang plows, 115 self-binding reapers, and 20 steam threshers.

In traversing the new State of North Dakota, the train passes through many thriving young towns and cities. Bismarck, the State capital, which will be reached Wednesday morning, is an attractive city of about 6,000 inhabitants. It is situated 1,690 feet above the sea, and far enough above the Missouri River to be safe in the time of freshets. The Capitol building has a commanding situation upon a hill, and is a handsome structure. Fort Abraham Lincoln, where the gallant and ill-fated General George A. Custer passed the last two years of his life, is about five miles distant on the high bluffs west of the river; and its white walls form a prominent object in the outlook. This post was attacked on five different occasions in 1872 and 1873 by the Sioux. Bismarck is an important river port. Not only do steamers reach here from St. Louis, a distance of 2,000 miles, but there are as many miles of navigable waters northward and westward in the upper Missouri and its tributaries. North of Bismarck are thriving Scandinavian and Russian settlements.

On leaving Bismarck the train crosses the Missouri River on a fine three-pier iron bridge. The construction of this great engineering work involved the control and rectification of the river, which is now confined to a channel 1,000 feet wide, although the stream formerly had a width of 2,800 feet. The main spans of the bridge are 400 feet, and there are two approach spans of 113 feet each. The east approach is two miles in length, and the west approach 6,000 feet. The bridge was opened Oct. 1, 1882, having cost $1,000,000. On the west shore is the railroad city of Mandan, the county seat of Morton county. Up to 1879 Mandan was the home of the warlike Sioux. The Dakota Division of the Northern Pacific ends and the Missouri Division begins here, and at this point the time changes, Mountain or 105th meridian time taking the place of Central or 90th meridian time.

Pyramid Park, or the "Bad Lands."

Near the little station of Fryburg, 612 miles west of St. Paul, the train suddenly leaves the rolling prairie and enters a long cut on a down grade, soon emerging upon a region of startling appearance. Here are the famous "Bad Lands," sometimes called Pyramid Park. The mighty forces of water and fire have here wrought strange confusion. Buttes from fifty to 150 feet high are seen, with rounded summits and steep sides, and variegated bands of color. The black and brown stripes are due to veins of impure lignites, from the burning of which are derived the shades of red; while the raw clay varies from a glaring white to a dark gray. The mounds are in every conceivable form, and are composed of different varieties of argillaceous limestone; friable sandstone and lignite lying in successive strata. The coloring is very rich. Some of the buttes have bases of yellow, intermediate circles of pure white, and tops of deepest red. Others are blue, brown, and gray. Between these curiously shaped elevations are ravines and gulches through which streams meander, and there are occasional park-like tracts that afford nutritious grazing for cattle. The term "Bad Lands," as applied to this region and generally understood, is certainly a misnomer. The old French *voyageurs* described the region as "*mauvaises terres pour traverser*," meaning that it was a difficult country to travel through; and the term has been carelessly translated and shortened into "Bad Lands." At Medora, on the west bank of the Little Missouri River, the Marquis de Mores formerly had a ranch and extensive abattoirs. Not far beyond this point is a prominent landmark on the left side of the track known as Sentinel Butte.

Montana.

One mile west of Sentinel Butte the train passes from Dakota into another of the new States — Montana, which, with its 143,776 square miles of area, is nearly as large as North and South Dakota combined. It is traversed by the Northern Pacific Railroad for nearly 800 miles. The mean height of Montana above the ocean level is estimated at 3,900 feet, the greatest elevation among the mountain peaks being about 11,000 feet, and the lowest, on the Missouri River, being about 2,000 feet. The main chain of the Rocky Mountains traverses the western part of the State in a course a little west of north, leaving about three fourths of its area on the eastern slope. Montana is well supplied with rivers. Her great water courses are Clark's Fork of the Columbia and the Missouri. The latter has many important tributaries within the State, including the Yellowstone, Milk, Musselshell, Marias, Jefferson, Madison, and Gallatin. The Missouri River system drains about 80,000 square miles of the State, or about twice as much as Clark's Fork. There are 1,500 miles of navigable streams within Montana. There are nearly 40,000,000 acres of grazing lands and 16,000,000 acres suitable for farming, in addition to vast mining resources. Next to California, Montana has probably produced more gold than any other State or Territory. The railroad traveler through Montana is likely to declare that the region is practically treeless, and yet the State contains no less than 14,000,000 acres of forests, mostly in its western part. Although the fourth largest State or Territorial division of the country, Montana had not risen above the forty-fifth in rank of population at the time of the last national census. Of the total area, about two fifths of the whole, or 58,000 square miles, are taken up by five Indian reservations. Nearly 20,000 Indians, or about one in fourteen of the entire Indian population of the United States, reside on the Montana reservations,—the Crows, Piegans, Gros Ventre, and Blackfeet tribes being of the number. Before 1861 there were no settlements in the State, and it was not until the gold-mining excitement of 1862 that Montana began to attract attention.

The Yellowstone Valley.

The first place of any importance reached in Montana is Glendive. This is a flourishing town of about 1,200 inhabitants, the county seat of Dawson county, and also an important point on the railway, the Missouri Division ending and the Yellowstone Division beginning here. The Yellowstone is one of the most important tributaries of the Missouri, and we ascend its banks for nearly 400 miles before reaching the Yellowstone National Park. Its waters are clear, and, unlike the Missouri, it has a defined channel, which it preserves in spite of freshets. The valley is fertile, and many fine streams enter the main river, especially from the south, the chief of these being the Powder, the Tongue, and the Big Horn. In many places fringes of bluffs and buttes are seen, the latter being of similar fantastic forms to those in the "Bad Lands," farther east.. The first exploration of the Yellowstone valley was made in

1806, when one of the returning parties of the famous Lewis and Clark expedition — the band led by Captain William Clark — descended the valley. In 1853 the government sent out an expedition, under command of the late General Stevens, to explore a northern route for a transcontinental railway; and subsequent to that date many expeditions were sent through this valley. When the actual surveys for the railroad were made and the work of construction begun, bodies of government troops were constantly engaged in protecting the workers, so tenacious were the aborigines of their fair possessions. Between the years 1873 and 1877, this now peaceful valley was the scene of many stirring events, in which the lamented General Custer, General Crook, General Miles, and other brave officers were concerned. The Sioux and Cheyennes, under Sitting Bull and Crazy Horse, were chiefly the hostiles, and the Indians fought desperately to prevent the whites from obtaining a foothold in this part of the Territory. General Custer and his command were killed on the banks of the Little Big Horn June 25, 1876. Later in the same year and during the year 1877, General Nelson A. Miles, then colonel of the Fifth Infantry, who had been stationed at a cantonment at the mouth of the Tongue River, now Fort Keogh, effectually cleared the valley of the hostiles. During the brilliant operations carried on by General Miles in 1876 and 1877, the troops under his command marched 4,000 miles, captured 1,600 horses, ponies, and mules, destroyed a large amount of camp equipage, caused the surrender of numerous bands, and cleared the country of 7,000 Indians. As a result, not less than 400 miles of the Yellowstone valley were opened up to settlement. The capture of the Nez Perces under Chief Joseph was one of the latest achievements in this campaign. Sitting Bull took refuge on British soil until the spring of 1880, when he returned to the United States, and was sent to the Standing Rock Indian Agency in Dakota.

Miles City, named in honor of General Miles, is seventy-nine miles west of Glendive.

It is a flourishing place of about 3,000 inhabitants, and the centre of a large cattle trade. A considerable portion of the business section of the place was destroyed by fire about the first of May, 1885. Fort Keogh is two miles beyond. Rosebud, Forsyth (named in honor of General James W. Forsyth), Big Horn, and Custer are stations farther west. At Big Horn the Northern Pacific crosses the river of the same name on a bridge 600 feet in length, and just beyond it pierces an intervening bluff by means of a tunnel 1,100 feet long. Pompey's Pillar, twenty-four miles beyond Custer, is a mass of yellow sandstone about 400 feet high, on the side of which Captain William Clark, the explorer, carved his name July 25, 1806. Until within a few years, the Yellowstone valley and the neighboring country contained great numbers of buffalo; but the animals have for the most part been slaughtered or driven farther north. The entire southern shore of the Yellowstone, for a distance of some 200 miles beyond Forsyth, and extending back to Wyoming, was set apart by Congress, in 1868, as a reservation for the Crow Indians. This is one of the most fertile and best-watered sections in Montana. Upon this tract, which is nearly as large as the State of Massachusetts, exist about 3,000 Indians. The Crows have long been friendly to the whites. In 1882 they re-ceded to the government a strip of their domain containing the Clark's Fork gold and silver mines. Billings, named in honor of Hon. Frederick Billings, a former president of the Northern Pacific Railroad, is a flourishing town of 2,000 inhabitants, 917 miles from St. Paul and 225 miles from Glendive. It is the centre of considerable trade, the surrounding country being occupied largely for cattle and for sheep-raising, and also the junction point of the Yellowstone and the Montana Divisions of the Northern Pacific Railroad. The place dates back only to the spring of 1882. A handsome brick church edifice has been erected at Mr. Billings's expense.

In passing up the valley west of Billings, the grand bulwarks of the Rocky Mountains begin to be seen. These snowy ranges are lofty, and at first are quite likely to be mistaken for clouds, so soft and ethereal do their white summits appear. The mountain wall extends across the west, and is also seen in the south; and the views increase in beauty and grandeur as we approach the range. Park City is a small but growing place twenty-three miles west of Billings. Eighteen miles east of Livingston and seventy-four miles west of Park City are some hot springs which are known to possess curative properties. Livingston, 1,032 miles from St. Paul, is a lively and enterprising place of about 1,800 inhabitants, although not yet eight years old. It is charmingly situated at the base of the Belt Mountains, about midway between the Great Lakes and the Pacific Coast, and is the junction point of the main line of railway and the Rocky Mountain Railroad of Montana, or the Yellowstone National Park Branch, which is owned by the Northern Pacific corporation.

Through the Upper Yellowstone Valley.

Leaving the main line of the Northern Pacific Railroad at Livingston, which will be reached Thursday morning, we shall turn southward and ascend the Yellowstone valley fifty-one miles farther, to Cinnabar, which lies only a short distance from the northern border of the National Park. We are now fairly in the mountain region, and the scenery of the upper valley is certainly magnificent — a fitting prelude to the wonders of the park. The railroad crosses the Yellowstone River at Livingston, where it makes an abrupt turn; and the branch line continues along its west bank. Passing through a narrow defile known as the Lower Cañon, we emerge into a fertile park thirty miles long and a dozen miles wide, through which the river flows. This tract is called Paradise valley, and contains a number of fine farms or ranches. One of these ranches is given up chiefly to the raising of fine horses, and contains several thousand noble animals. The river makes many graceful curves, and is fringed with trees. Its clear waters abound in trout and grayling, and its surface is the haunt of myriads of water-fowl. The snow mountains border the valley on the south and east, rising 3,000 or 4,000 feet above the valley itself; while the western hills are of lesser elevation, but interesting on account of their evidences of volcanic action. A grand panorama of stately domes is constantly unfolding on the left, with the river and a beautiful intervale for a foreground. Along the valley and high upon its sides are many evidences of ancient glaciers. Dr. Archibald Geikie, the distinguished British geologist, found proofs that at the second cañon the Yellowstone glacier was from 800 to 1,000 feet deep. At the upper end of Paradise valley, the massive form of Emigrant Peak, 11,034 feet in height, becomes a prominent landmark. Above Paradise valley the river and the railway are crowded into a narrow gorge called the Middle Cañon. The stream here is not more than 100 feet wide. The scenery is wild and desolate. Some seven miles above the Middle Cañon is Cinnabar Mountain, a bold peak which probably acquired its name from a broad stripe of vermilion hue that girdles its cliffs. Certain it is that no cinnabar was ever found in the vicinity. On one face of the mountain are two enormous dikes of trap-rock, which have received the designation of the "Devil's Slide." Just south of this mountain, and near the junction of the Gardiner and the Yellowstone Rivers, lies the station of Cinnabar, the terminus of the railroad.

Conveyance is had from Cinnabar to Mammoth Hot Springs, a distance of seven miles, by Wakefield's stage line. The stage road formerly crossed a spur of Sepulchre Mountain, but its course has changed for the better. It now follows up the west side of the Gardiner River, gaining, by an easier grade, the plateau on which the

Mammoth Hot Springs Hotel is situated, and above which the terraces built by the springs themselves rise. The hotel will be reached at about 1.00 P. M.

The Yellowstone National Park.

The reservation known as the Yellowstone National Park, set apart for public uses by an act of Congress passed in 1872, covers a tract of about sixty-five miles in length, from north to south, and about fifty-five miles in width, from east to west, lying chiefly in Northwestern Wyoming, and overlapping, to a small extent, the boundaries of Montana, on the north, and Idaho, on the west. This gives an area of 3,312 square miles, a tract that is nearly the area of the States of Rhode Island and Delaware combined, and nearly half as large as the State of Massachusetts. The name "park" is perhaps misleading, as it is exceedingly diversified, containing numerous parks or open tracts, as the name "park" has been bestowed in the mountain sections of Colorado, besides high mountains and beautiful lakes. The main Rocky Mountain chain — the true continental divide — crosses the southwestern portion in an irregular line, leaving by far the greater expanse on the eastern side. The least elevation of any of the narrow valleys is 6,000 feet, and some of them are from 1,000 to 2,000 feet higher. The mountain ranges which hem in these valleys are from 10,000 to upwards of 11,000 feet in height, Electric Peak (in the northwest corner of the park, not far back of Mammoth Hot Springs) having an elevation of 11,300 feet, and Eagle Peak, southeast of Yellowstone Lake, reaching the height of 11,000 feet. The latter is one of many high peaks in the southern part of the Absaroka range — so-called from the Indian name of the Crow Nation. This range has been popularly called the "Hoodoo Mountains." The Absarokas offer, for more than eighty miles, a bold, unbroken barrier — a rough, rugged country, dominated by high peaks and crags from 10,000 to 11,000 feet in height. In the south part of the park, near Heart and Lewis Lakes, is Mount Sheridan, 10,200 feet high; and Mount Washburne, in the centre of the reservation, has an elevation of about 10,000 feet. The Gallatin range encloses the park on the north and northwest, lying west of the Yellowstone valley; the Snowy range, a spur of the Absarokas, lying east. Electric Peak is the highest of the Gallatin range, and Emigrant Peak the most prominent of the Snowy Mountains. The drainage of the park area is divided among three distinct systems — the Yellowstone River, which has about three fifths and runs in a sinuous course from the southeast to the northwest corner of the park, mainly through deep cañons, and the Madison and Snake Rivers, which have about one fifth each. The Yellowstone and Madison are tributary to the Missouri, and the Snake flows into the Columbia.

John Colter, or Coulter, who was connected with the Lewis and Clark expedition, and went back on his return in 1806 to hunt and trap on the headwaters of the Missouri, was probably the first white man who ever saw any of the springs or geysers in this wonderful region. After a narrow escape from the Blackfeet Indians, he lived for a number of years among the Bannocks, who ranged through the country in which the park is located. In 1810 he returned to St. Louis, and told wonderful tales of the region, which were not believed. "Coulter's Hell" was the name afterwards applied to this section by hunters and trappers. In 1844 James Bridger, the famous Rocky Mountain guide and scout, described some of the wonderful springs and geysers, but his stories were not credited. Later Captain John Mullan's report on the construction of a military road from Fort Walla Walla to Fort Benton, Captain W. F. Reynolds's report on the exploration of the Yellowstone River, and a letter of Captain Walter W. A. De Lacy, who in 1863 visited the Lower Geyser Basin, made mention of the geysers. The first extended account of the Yellowstone geysers was published in

1870, based on a visit in 1869 by David E. Folsom. In 1871 Dr. F. V. Hayden made his preliminary survey, the report of which prompted Congress to set aside the tract as a public park. Since that time Dr. Hayden and his assistants have made further surveys of the region, and his twelfth annual report for 1878 (issued in 1883) gives the fullest information about the park yet published. For a number of years past, Professor Arnold Hague has been engaged, with a corps of assistants, in a detailed examination of the park. The next Geological Report to be devoted to this region, embodying, as it will, the result of Professor Hague's recent work, will be invaluable. Contour maps of the park are in process of preparation.

The surveillance of the park is in the hands of the military, and the present superintendent is Captain Boutelle of the First Cavalry, a very efficient officer. The regulations against killing game, the use of firearms, negligence in leaving campfires, the removal of specimens, and the marring of formations are strict; but the public has reason to be thankful that they are so, since they tend to the maintenance of the animal life, and likewise to the preservation of the park wonders in all their beauty and fineness.

The Geological History of the Park Region.

The following extract from a paper by Professor Hague, read before the American Institute of Mining Engineers in July, 1887, gives succinctly the geological history of the park · "Throughout Tertiary time in the park area, geological history was characterized by great volcanic activity, enormous volumes of erupted material being poured out in the Eocene and Middle Tertiary, continuing with less force through the Pliocene, and extending into Quaternary time. Within very recent times there is no evidence of any considerable outburst; indeed, the region may be considered long since extinct. These volcanic rocks present a wide range in chemical and mineral composition and physical structure. They may all, however, be classed under three great groups — andesites, rhyolites, and basalts — following each other in the order named. In some instances eruptions of basalt occurred before the complete extinction of rhyolite, but in general the relative age of each group is clearly and sharply defined; the distribution and mode of occurrence of each presenting characteristic and salient features, frequently marked by periods of erosion.

" Andesites are the only volcanic rocks which have played an important part in producing the present structural features of the mountains surrounding the park. As already mentioned, they occur in large masses in the Gallatin range, while most of the culminating peaks in the Absorakas are composed of compact andesites and andesitic breccias. On the other hand the andesites are not confined to the mountains, but played an active role in filling up the interior basin. That the duration of the andesitic eruptions was long continued, is made evident by the plant-remains found in ash and lava beds through 2,000 feet of volcanic material. The plants have as yet been too little studied to define positively their geological horizons. It is quite possible that they may indicate marked differences of climate between the lower and upper beds.

" In early Tertiary times a volcano burst forth in the northeast corner of the depressed area encircled by the Park Mountains, not far from the junction of the Absaroka and Snowy ranges. While not to be compared in size and grandeur with the volcanoes of California and the Cascade range, it is, for the Rocky Mountains, one of no mean proportions. It rises from a base about 6,500 feet above sea level, the culminating peak attaining an elevation of 10,000 feet. This gives a height to the volcano of 3,500 feet from base to summit, measuring from the Archæn rocks of the Yellowstone valley to the top of Mount Washburne. The average height of the crater rim is about

9,000 feet above sea level, the volcano measuring fifteen miles across the base. The eruptive origin of Mount Washburne has long been recognized, and it is frequently referred to as a volcano. It is, however, simply the highest peak among several others, and represents a later outburst, which destroyed in a measure the original rim and form of the older crater. The eruptions for the most part were basic andesites. Erosion has so worn away the earlier rocks, and enormous masses of more recent lavas have so obscured the original form of the lava-flows, that it is not easy for the inexperienced eye to recognize a volcano and the surrounding peaks as the more elevated points in a grand crater wall. By following around on the ancient andesitic rim, and studying the outline of the old crater, together with the composition of the lavas, its true origin and history may readily be made out. . . . This old volcano of early Tertiary time occupies a prominent place in the geological development of the park, and dates back to the earliest outbursts of lava, which have in this region changed a depressed basin into an elevated plateau.

"After the dying out of the andesitic lavas, followed by a period of erosion, immense volumes of rhyolite were erupted, which not only threatened to fill up the crater, but to bury the outer walls of the volcano. On all sides the andesitic slopes were submerged beneath the rhyolite to a height of from 8,000 to 8,500 feet. This enormous mass of rhyolite, poured out after the close of the andesitic period, did more than anything else to bring about the present physical features of the park table-land. A tourist making the customary trip through the park, visiting all the prominent geyser basins, hot springs, and the Grand Cañon and Falls of the Yellowstone, is not likely to come upon any other rock than rhyolite, excepting, of course, deposits from the hot springs. . . . A description of the rhyolite region is essentially one of the park plateau. Taking the bottom of the basin at 6,500 feet above sea level, these acidic lavas were piled up until the accumulated mass measured 2,000 feet in thickness. It completely encircled the Gallatin range, burying its lower slopes on both the east and west sides; it banked up all along the west flanks of the Absorakas and buried the outlying spurs of the Teton and Wind River ranges. . . .

"That the energy of the steam and thermal waters dates well back into the period of volcanic action, there is, in my opinion, very little reason to doubt. . . . Although the rhyolite eruptions were probably of long duration and died out slowly, there is, I think, evidence to show that they occupied a clearly and sharply defined period between the andesites and basalt eruptions. Since the outpouring of this enormous body of rhyolite and building up of the plateau, the region has undergone profound faulting and displacement, lifting up bodily immense blocks of lava and modifying the surface features of the country. Following the rhyolite came the period of basalt eruptions, which, in comparison with the andesite and rhyolite eras, was, so far as the park was concerned, insignificant, both as regards the area covered by the basalt and its influence in modifying the physical aspect of the region. . . . After the greater part of the basalt had been poured out, came the glacial ice, which widened and deepened the pre-existing drainage channels, cut profound gorges through the rhyolite lavas, and modeled the two volcanoes into the present form. . . . Since the dying out of the rhyolite eruptions, erosion has greatly modified the entire surface features of the park. Some idea of the extent of this action may be realized when we recall that the deep cañons of the Yellowstone, Gibbon, and Madison Rivers — cañons in the strictest sense of the word — have all been carved out since that time. To-day these gorges measure several miles in length, and from 1,000 to 1,500 feet in depth. . . .

"Since the close of the ice period no geological events of any moment have brought about any changes in the physical history of the region other than those produced by the direct action of steam and thermal waters. A few insignificant eruptions have probably occurred, but they failed to modify the broad outlines of topographical structure, and present but little of general interest beyond the evidence of the continuance of volcanic action into Quaternary times. Volcanic activity in the park may be considered as long since extinct. At all events, indications of fresh lava-flows within historical times are wholly wanting. This is not without interest, as evidence of underground heat may be observed everywhere throughout the park in the waters of the geysers and hot springs. All our observations point in one direction, and lead to the theory that the cause of the high temperatures of these waters must be found in the heated rocks below, and that the origin of the heat is in some way associated with the source of volcanic energy. It by no means follows that the waters themselves are derived from any deep-seated source; on the contrary, investigation tends to show that the waters brought up by the geysers and hot springs are mainly surface waters which have percolated downwards to a sufficient distance to become heated by large volumes of steam ascending through fissures and vents from much greater depths."

In discussing the antiquity of the geysers, Professor Hague gives some figures based on the ascertained growth of deposit around "Old Faithful," and draws the conclusion that its measured thickness of seventy feet must have required 25,000 years to reach its present development. He adds: "This gives us a great antiquity for the geyserite, but I believe that the deposition of the siliceous sinter in the park has been going on for a still longer period of time." The number of geysers, hot springs, mud-pots, and paint-pots scattered over the park exceeds 3,500, according to the same authority; and, if to these be added the fumaroles and soltafaras, from which issue in the aggregate enormous volumes of steam and acid and sulphur vapors, the number of active vents would in all probability be doubled.

The Mammoth Hot Springs.

We shall make two visits to the Mammoth Hot Springs,—before and after the tour of the park,—so that there will be ample time to inspect the wonders of the region. The springs have built up a series of remarkable terraces on the west side of a little plateau, or basin, 1,000 feet above the Gardiner River, into which their waters flow. On the opposite side of the river rises the long, rugged mass of Mount Evarts, which has an elevation of 7,600 feet, or 1,213 feet higher than the plateau. The whole plateau and the steep slopes extending down to the river are mainly composed of calcareous deposits, resulting from springs and geysers now extinct. There are no active geysers at the present time in this basin; but two large cones of extinct geysers stand at no great distance from the hotel, and are almost the first objects to attract attention. These are "Liberty Cap," an isolated shaft forty-five feet in height and twenty feet in diameter at its base, and "Giant's Thumb," or "Liberty Cap No. 2," about 100 yards distant, and smaller. Both show signs of considerable age, and are gradually crumbling away. All around are a number of shallow basins; and in other parts of the plateau are cavities and caverns, from which hot springs probably flowed at some period more or less remote. The beautiful terraces, now in process of formation just below the active springs, are the most interesting objects to be seen, however. The recent deposits, on which the springs are at present situated, occupy about 170 acres. The rocks upon which the deposits are found belong to the Middle and Lower Cretaceous and Jurassic formations. Beneath the Jurassic rocks there are probably carboniferous limestones, from whence come the carbonic acid and carbonates that exist in the water of the springs. The springs at present are mainly on two masses of deposit, and these are arranged in terraces, of which there may be said to be four principal ones with subdivisions. Dr. A. C. Peale (in Part II. of Hayden's

Twelfth Annual Report) enumerates fifty-two different springs in this district, which have a temperature varying from 63 to 165 degrees Fahrenheit. The terraces are a succession of beautiful basins, over the rims of which the water falls in gentle rivulets and miniature cascades. The deposits, which result from evaporation, at the margin of each basin are exquisite in form and color. The rims and walls present the most delicate arabesques, and fretted stalactites depend from the edges. A rounded pulpit, seemingly supported by a series of columns, has been formed in one place. Rich cream and salmon tints predominate, but these deepen into shades of red, brown, green, and yellow; while the turquoise blue of the waters affords a striking contrast of color. The main springs are in a pool, or a succession of three pools, 100 feet wide and 200 feet long. Dr. Hayden, in his *Report* for 1871, thus describes the general view of the springs: "The wonderful transparency of the water surpasses anything of the kind I have ever seen in any other portion of the world. The sky, with the smallest cloud that flits across it, is reflected in its clear depths; and the ultramarine colors, more vivid than the sea, are greatly heightened by the constant, gentle vibrations. One can look down into the clear depths, and see with perfect distinctness the minutest ornament on the inner sides of the basins; and the exquisite beauty of the coloring and the variety of forms baffle any attempt to portray them either with pen or pencil. And then, too, around the borders of these springs, especially those of rather low temperature, and on the sides and bottoms of the numerous little channels of the streams that flow from these springs, there is a striking variety of the most vivid colors. I can only compare them to our most brilliant aniline dyes — various shades of red, from the brightest scarlet to a bright rose tint; also yellow, from deep, bright sulphur, through all the shades to light-cream color; there are also various shades of green, from the peculiar vegetation. These springs are also filled with minute vegetable forms, which, under the microscope, prove to be diatoms, among which Dr. Billings discovers *Palmella* and *Escillara*. There are also in the little streams that flow from the boiling springs great quantities of a fibrous, silky substance, apparently vegetable, which vibrates at the slightest movement of the water, and has the appearance of the finest quality of Cashmere wool. When the waters are still, these silken masses become encrusted with lime, the delicate, vegetable threads disappear, and a fibrous, spongy mass remains, like delicate snow-white coral." One of the most beautiful springs of all has been named the "Cleopatra." In the edge of the forest above the plateau, and near the old road up Terrace or White Mountain, is a beautifully tinted mound called the Orange Geyser. The geyser in this instance, however, is only a boiling spring, similar to the misnamed geysers of California. The waters of some of these springs nearest the hotel are utilized for bathing.

There are several hot springs within a few feet of the Gardiner River; and the feat of catching trout in the pure, cold stream, and boiling them in the neighboring spring before they are detached from the hook, may actually be performed. In a depression above the spring formations is a little lake, containing both hot and cold springs. There are several falls upon the Gardiner River, the finest being upon the Middle Fork, about four miles distant from the hotel. These falls are 140 feet high, and are in a cañon 1,200 or 1,500 feet deep. Near at hand are Bunsen Peak (8,775 feet) and the bold Sheepeater Cliffs. The latter take their name from a tribe of Indians that is supposed to have once inhabited this part of the park, and to have lived chiefly upon the mountain sheep, which still abound on Mount Evarts and in other secluded places.

On the Road to the Geysers.

Leaving the hotel at Mammoth Hot Springs Friday morning, the party will proceed to the Lower Geyser Basin, a distance of forty miles. The journey and the subsequent trips about the park will be made in comfortable spring wagons. The road completed by the government a few years since, from the springs up the Gardiner River Cañon, and through the "Golden Gate" to Swan Lake, will be taken; and the steep ascent of Terrace Mountain, which was formerly necessitated, will be avoided. Emerging upon the elevated plateau near the pretty little sheet of water known as Swan Lake, which forms one of the numerous sources of the Gardiner, a fine view is had of the Gallatin range. These mountains occupy a considerable area in the northwestern section of the park, the prominent peaks being Quadrant Mountain (10,127 feet), Bell's Peak (10,331 feet), and Mount Holmes (10,528 feet). Bunsen Peak, which we have left behind us, and also Electric Peak, Sepulchre Mountain, and Cinnabar Mountain belong to the same range. Near the crossing of the Middle Fork of the Gardiner is an old Indian trail which the Bannocks formerly used. Willow Park is the name given to a little region which has often served as a camping-place, and not far beyond are the famous Obsidian Cliffs and Beaver Lake. There is a ridge 1,000 feet in length, and from 150 to 250 feet in height, rising in almost vertical columns from the eastern shore of the little lake. This mass is composed of volcanic glass; and, when it was found advisable to construct a carriage road along its base, the only practicable way of operation was to build huge fires upon the largest masses, and, after they had been expanded by the heat, to dash cold water upon them. This had the effect of fracturing the blocks into fragments, so that they could be removed. Smaller blocks of obsidian are found in other parts of the park. Beaver Lake was formerly the home of a numerous colony of those industrious little animals, and around its wooded shores are many hot and cold springs. The road flanks the lake for a mile or so, skirts the alum waters of Green Creek, and then crosses the divide which separates the waters of the Gardiner River, which flow into the Yellowstone, from those of the Gibbon River, which find their way into the Madison. There are a number of pretty little lakes near the road north of the Norris or Gibbon Geyser Basin.

The Norris or Gibbon Geyser Basin.

This is the first of the true geyser sections reached in entering the park by this route. The Gibbon River was named by Dr. Hayden in 1872, in honor of General John Gibbon, who had partially explored it; and the discoverer of the Geyser Basin (in 1875) was Mr. P. W. Norris, then superintendent of the park. This basin is the highest in the park, its elevation being 7,257 feet above the ocean level; and it covers an area of about six square miles. There are numerous springs of water and mud, and a few veritable geysers from which water gushes forth. One of these, the "Monarch," ejects a column of water to the height of 100 feet. Another, known as "Steamboat Vent," or the "Growler," has broken out within the past few years. The "Hurricane" is another furious crater; and the "Minute Man" and "Constant" are smaller geysers, but interesting on account of their frequent activity. The mud springs and geysers are strange objects. Mud of various tints and states of consistency is thrown out or seen continually seething and bubbling. Dr. Peale enumerates ninety-seven springs of various kinds within this basin. The peculiarities here noticed are the absence of any very great accumulation of deposits, the newness of some of the important geysers, and the abundance of iron and sulphur.

From the Norris Geyser Basin Southward.

Leaving the Norris Geyser Basin after dinner, we shall continue southward, descending to Elk Park, an elevated meadow about five miles in circumference, and from thence going through the Gibbon Cañon. Not far from the entrance to the cañon, left of the stage road, are the Gibbon "Paint Pots," a collection of remarkable mud springs of different colors. About a mile distant from the entrance to the cañon is the Monument Geyser Basin, upon the slope of Mount Schurz. The mountain must here be climbed for a mile, to an elevation about 1,000 feet above the road. There are several active mud springs; but the geysers have become inactive, although steam continues to escape from some of their throats. Chimney-like cones have been built up by the old geysers to the height of from six to twenty feet. There are twelve of these strange forms. One resembles a headless man, another a crouching animal, and all stand forth like spectres in this weird scene of desolation. From the summit of one of the cones steam is sent forth with a whistling sound.

Some four miles south of the trail leading to the Monument Geyser Basin and five miles from the Forks of the Firehole are the Falls of the Gibbon. They are in a deep cañon beside the road, and a magnificent view of the cataract may be had without leaving the carriages.

The Lower Geyser Basin.

The hotel in the Lower Geyser Basin (or at the Forks of the Firehole, as the region is also designated) will be reached at a seasonable afternoon hour. This basin is a wide valley, with an area of between thirty and forty square miles, having an average elevation of 7,236 feet, or about 150 less than the Upper Geyser Basin, from seven to eight miles distant. Above this the surrounding plateau rises from 400 to 800 feet, the slopes being heavily timbered. In this section Dr. Hayden's party found 693 springs, including the Egeria Springs of the Midway Basin, among which the "Excelsior" Geyser and "Prismatic" Spring are counted. Much of the lower section of the basin consists of marsh and meadow, and the exploration of the springs is not always carried on with dry feet. The "Fountain," which is in action several times daily, is one of the principal sights of this section. In its vicinity are several smaller geysers and also the famous "Mammoth Paint Pots." In a crater forty feet or more in diameter, there are numerous mud springs, in which the material cast forth has the appearance of paint of different colors. The pasty material is exceedingly fine to the touch, and, as it bubbles up, generally assumes for a moment some floral form. A mile east of this group is another interesting collection of springs and geysers, but it is at present difficult of access. One of these geysers, the "Great Fountain" (in action about every forty-six hours), plays to the height of 150 feet or more, and is classed among the most powerful geysers in the park.

"Excelsior" Geyser and the "Grand Prismatic" Spring.

Leaving the hotel in the Lower Geyser Basin Friday morning, the parties will proceed to the Upper Geyser Basin, visiting the "Paint Pots" and the "Fountain" Geyser on the way. A halt will also be made in the Midway Geyser Basin for the purpose of inspecting the great "Excelsior" Geyser and "Prismatic" Spring, both of which lie on the west bank of the river and may be approached by a foot bridge. The "Excelsior," the largest geyser known in the world, burst forth in 1888 into great activity after a period of inaction lasting about six years. The eruptions occurred at intervals of about an hour, and were very powerful. A great dome of water, often accompanied by lavatic stones, was thrown into the air to the height of between 200 and 300 feet, while the accompanying column of steam rose 1,000 feet or more. The crater is an immense pit 330 feet in length and 200 feet in width at the widest part, the cliff-like and treacherous walls being from fifteen to twenty feet high from the boiling waters to the surrounding level. The name of "Cliff Cauldron" was given to it by the Hayden survey in 1871, and it was not until some years later that it was discovered to be a gigantic geyser. "Hell's Half Acre" is another expressive name given to this frightful pit. Two rivulets pour forth from this terrible cauldron, and the deposits are very brilliantly colored; yellow, orange, red, and rose tints being displayed in profusion. Near this pit is the "Grand Prismatic" Spring, the handsomest of all the park springs. It measures 350 by 250 feet, and its name was given by Dr. Hayden's party in 1871. Over the central pit or bowl, which is constantly boiling and sending up vast columns of steam, the color is a deep blue, which fades into green toward the edge. The surrounding, shallower basin has a yellower tint, fading into orange; and outside the rim is a brilliant red formation. This fades into purples, browns, and grays, the whole being on the gray-white ground of the deposit. There are several other remarkably beautiful springs in the vicinity, including the "Turquoise," a deep, blue-tinted square spring, at a lower level than the "Prismatic." Above the Midway Basin the Firehole River is lined with springs and small geysers, which become more numerous as we near the Upper Geyser Basin, about five miles distant.

The Upper Geyser Basin and its Wonders.

In a nearly level tract inclosed by low hills, with the Firehole River flowing through it and mainly upon the east side, are found the chief geysers of this marvelous region.

The basin has an area of about four square miles and a general elevation of 7,372 feet. Dr. A. C. Peale (in Hayden's *Report*) enumerates 440 springs and geysers within this territory, including twenty-six distinct geysers. These figures resulted from only a partial survey of the region. Professor Hague gives the names of forty-nine, some of which, however, are of small account. The Upper Basin group includes, with others, the following: "Old Faithful," "Castle," "Bee Hive," "Giant," "Giantess," "Grotto," "Grand," "Oblong," "Splendid," "Comet," "Fan," "Riverside," "Young Faithful," "Turban," "Saw Mill," "Lion," "Lioness," and the "Cubs." These are scattered over the surface of the basin, chiefly along the river bank, "Old Faithful" being at the southern extremity, and the "Fan" and "Riverside" at the northern end, near where the wagon road enters the basin. The "Grotto," "Giant," "Oblong," and "Castle" are near the road. The "Bee Hive," with its handsome cone, from which the geyser takes its name, together with the "Giantess" and the "Lion" group, is upon the opposite side of the river from the hotel. Of the geysers above mentioned, the "Giant," "Grand," and "Turban" have lately become inactive. Many beautiful springs are in proximity to the geysers, forming objects of interest second only to the mammoth fountains of hot water. The springs have generally great depth and clearness, and the beholder can examine minutely the delicate formations far beneath the surface. The edges are in many cases scalloped and variously tinted, causing the deep-blue spring and its exquisitely colored border to resemble a mammoth flower. One spring bears the appropriate name of the "Morning Glory." Another very beautiful spring is situated quite near the "Castle" Geyser. There is no time when the subterranean forces are inactive, and the Upper Geyser Basin at all times presents a strikingly weird scene. Strange sights and sounds greet the visitor on every side. Clouds of steam arise from a dozen different localities, some of the springs being hidden in the timber which covers the neighboring mountain-sides. In the vicinity of the geysers, there are hissing, gurgling, and thunderous thuds, as if the imps of the infernal regions had heavy contracts of labor to perform. The eruption of any of the great geysers is heralded by the escape of steam from an adjacent steam vent; and directly after a fountain of hot water is thrown into the air with fearful belchings, to fall again in a giant cataract. Almost constantly there is a display of some kind going on, and the strange din is kept up night and day. There are daily eruptions of some of the geysers, while others have longer intervals of quiescence.

"Old Faithful" is the most famous of all the Yellowstone Park geysers, the frequency and regularity of its eruptions having afforded opportunities for careful observation and record. It is situated on a little mound of geyserite about a dozen feet high and about 700 feet from the river. The chimney or crater has an oblong opening, measuring two by six feet inside. This slopes inward, and is the top of a basin about five feet deep, at the bottom of which is an irregular orifice, the head of the geyser tube. The inside of the basin is of a dark yellow or rusty color. The eruptions of "Old Faithful" occur at intervals of from fifty-two to eighty minutes, and last from three to five minutes, a column of water being thrown to the height of from 100 to 150 feet. Dr. Peale's measurements give an elevation of 135 feet. The eruption begins with some preliminary splashes, or spurts, from three to a dozen or more in number. These continue about four minutes, becoming more and more powerful, when they are followed by a rapid succession of jets, which escape with a roar, and soon attain the maximum height. A column of steam ascends three or four times the height of the stream of water. The geyser received its name from Mr. N. P. Langford in 1870.

The "Bee Hive" was also named, like most of the other geysers, by the Washburne exploring party in 1870. It stands about 100 feet from the river. The cone is three feet in height, almost circular, and has a circumference of twenty feet at the base. The top measures three by four feet, and the opening is two by three feet. The cone is beautifully coated with beaded silica, in places of pearly aspect. There is no surrounding terraced deposit, for the reason that little water falls upon the ground in the vicinity. A line dropped into the tube reaches a depth of twenty-one feet, which only marks the straight course of the throat of the geyser. Just outside the cone are several vents, or steam holes, one of which acts as a sort of preliminary vent, or signal, for the eruption of the geyser. The eruption of the "Bee Hive," which occurs at irregular intervals, is a magnificent spectacle. The water and steam escape in a steady stream for from two to five minutes, and the column of water reaches a height of from 170 to 219 feet. The force is very great, and the ground is shaken during the action of the geyser.

The "Giantess" is situated about 400 feet back of the "Bee Hive," and is the largest geyser in the Upper Basin. Its intervals between eruptions are about fourteen days, and an immense column of water is projected to a height of between 100 and 200 feet. The crater, or basin, which is usually filled with boiling water, is irregular in shape, thirty-four feet in its greatest length, and twenty-four feet in its widest portion, and it has been measured with a line to the depth of sixty-three feet. Up to 1878 only four eruptions of this geyser had been witnessed.

Not far from the "Bee Hive" and "Giantess" are a group of small geysers called the "Lion," "Lioness," and "Two Cubs." These names were given on account of the fancied similarity of the cones to animal forms. Professor Comstock named the same group the "Trinity," and Dr. Peale named the principal one "Niobe." The height of the stream is about seventy-five feet in the largest geyser of the group, and sixty feet in the second largest.

The "Castle" Geyser has the most imposing crater in the Upper Basin, and was so named by Langford and Doane in 1870, on account of its striking resemblance to the ruins of a feudal castle. It is on the summit of a mound of white and gray deposit that covers about three and a half acres. On this mound, 400 feet from the river, is a sort of platform composed of laminated geyserite 100 feet long, seventy-five feet wide, and three feet high, from which rises the castellated turret or cone. This is nearly twelve feet high, with an irregular contour, the circumference at the base being about 120 feet, and at the top about sixty feet. The orifice of the geyser tube is three feet in diameter, nearly circular, and is lined with large beaded globular masses of a dull orange color. Steam is almost constantly escaping, and jets of water occasionally spurt above the cone; but the grand eruptions are said to occur at intervals of about forty-eight hours. The height of the stream, as recorded by observers in late years, varies from thirty to 100 feet; but the Earl of Dunraven, who witnessed an eruption in August, 1874, records that the water reached an elevation of 250 feet. He considers it the grandest geyser in the region. One hundred and fifty feet north of the "Castle" is the beautiful "Blue-Crested Spring." The basin of the spring is a trifle over nineteen feet in diameter, and it is bordered by a scalloped ring six inches in height, adorned with pearl-like nodules. Its depth is forty-four feet, and the water is transparent and ethereally blue.

Below the "Castle," on the east side of the river, are the "Grand" (so named by Dr. Peale in 1871) and the "Turban." Around the mouths of both these geysers, and especially the latter, are large cushion-like masses of geyserite. The basin is fifty-two feet in diameter, and slightly depressed, and the orifice of the "Grand" is two by four feet. The intervals between the eruptions were formerly from seventeen to thirty-one hours, but these geysers ceased regular action two years since.

The "Giant" is upon the left or west bank of the Firehole, and near the roadway. Its cone resembles a huge stump with one side broken out, the fracture having resulted from some especially powerful eruption. It is ten feet high, and the orifice is about five feet in diameter. The intervals between its eruptions were formerly about four days, and the great fountain played sometimes for three hours or more, to a height of from 130 to 250 feet. It ceased regular action in March, 1886. There are several small geysers in the vicinity, including "Young Faithful."

Near at hand, too, is the "Oblong" Geyser, which was thought by the early explorers to be merely a hot boiling spring. Here an oblong pool, fifty feet in length by thirty-one in width at one extremity, and twenty-one feet at the other, is tossed bodily into the air in a splashing mass, to an elevation of ten or fifteen feet. The eruptions are said to take place once or twice daily.

Not far below the "Giant" and "Oblong" is the famous "Grotto," one of the most interesting of all the geysers. The double cone is eight feet high, fifty-three feet long, and twenty-six feet wide, and is hollowed into fantastic arches, beneath which are grotto-like cavities that act as lateral orifices during an eruption. There are two vertical orifices — one two by six feet, and the other three by five feet. The eruptions consist of two well-defined columns alternating with each other, the arches serving to break the water into sprays. Near one of the openings a pillar-like mass of geyserite rises to a height of about six feet. The "Grotto" is in action several times a day.

The "Splendid" and "Comet" are two geysers situated in the "White Pyramid" group, west of the "Giant." Both sometimes play together, the column of the former reaching an altitude of about 150 feet, and the latter spurting obliquely into the other. The eruptions of the "Splendid" take place about every three hours, and last from four to ten minutes. The "White Pyramid" is an old geyser cone; not far from it is a boiling spring known as the "Devil's Punch Bowl," and west of the latter lies "Specimen Lake."

The "Fan" and "Riverside" are on the east bank of the river, near the bridge. Both play three times daily. The "Fan" has an orifice which discharges two radiating jets about sixty feet. The "Riverside" plays across the river, and its displays constitute one of the prettiest geyser exhibitions to be seen in the park. The "Mortar" is near the "Fan." The "Silver Globe" group of springs and geysers is a mile below the bridge, west of the river. The "Solitary" is at the edge of the timber, half a mile south of the hotel. It is chiefly remarkable on account of its pearl-like formations about its margin. There are other geysers in the vicinity which are seldom visited on account of the distance or inaccessibility. The chief of these is the "Lone Star," about four miles distant, which is in eruption at intervals of twenty minutes. Its distinguishing feature is a cone of great size and beauty.

The Theory of Geyser Action.

Herschell, Bunsen, Comstock, McKenzie, and other scientists have advanced theories as to geyser action, and that of Bunsen is generally accepted in the main. The presence of igneous rocks which still retain their heat at a considerable distance below the surface, and the admission of water to subterranean apertures, or tubes, seem to be the requisite conditions to produce a geyser. This word, by the by, is derived from the Icelandic word *geysa* — to gush. Steam is formed within caverns or chambers partly filled with water; and a column of water, as well as the steam itself, is driven out through the tube. Intermittent geyser action may result from curvatures in the tube, deposits of water being left in the depressions from previous upheavals, to await the next discharge, the intervals between the eruptions being governed by the size of the chambers wherein the steam is generated, conditions of temperature, etc. It has been noticed that geysers occur where the intensity of volcanic action is decreasing. In the neighborhood of active volcanoes, such as Vesuvius, the temperature appears to be too high, and the vapor escapes as steam from what are called *stufas*. When the rocks are more cooled, the water comes forth in a liquid form. Says Dr. Peale in *Science*

(July 27, 1883): "It is probable that all geysers are originally due to a violent outbreak of steam and water, and that the first stage is that of a huge steam vent. Under such conditions, irregular cavities and passages are more likely to be formed than regular tubes. The lining of the passages and tubes takes place afterward, and is a slow process. Whether the subterranean passages in which the water is heated are narrow channels, enlargements of tubes, or caverns and tubes, is probably of little consequence, except as the periods or intervals of the geyser are influenced. If water in a glass tube be heated rapidly from the bottom, it will be violently expelled from the tube; or, if boiled in a kettle that has a lid and a spout, either the lid will be blown off or the water will be forced out of the spout. In the first case we have an explanation, in part, at least, of Bunsen's theory; and the second exemplifies the theories which pre-suppose the existence of subterranean cavities and connected tubes. The simpler the form of the geyser tube, the less is the impediment to the circulation of the superheated water; and in this fact lies the explanation of the difference between constantly boiling springs and geysers. The variations and modifications of the subterranean water passages, however, must be important factors entering into any complete explanation of geyseric action."

From the Upper Geyser Basin to Yellowstone Lake.

Resuming our wagon journey through the park, we first retrace our way to the Lower Geyser Basin, going by a more direct route than we came. From that point we ascend the East Fork of the Firehole, or Nez Perces Creek, for a distance of ten miles, fording the stream several times. The stream is fed largely by hot springs. Beaver abound here, as well as in the main stream below the hotel at Lower Geyser Basin, and several times have dammed up the creek to an extent that has made labor for the road builders. On leaving the creek we cross the high divide between the Madison River system and the Yellowstone River. As the heights are climbed, a beautiful panorama of forest and mountain scenery unfolds itself to view. The serrated wall of snow peaks forming the Gallatin and Madison ranges are prominent features in the outlook. After passing through some noble forests, Mary's Lake, a silvery sheet of water fed by alkaline springs, is reached at an altitude of 8,336 feet. Descending the east slopes into Hayden valley, a name that has been given to the Yellowstone drainage area lying between the lake and the falls, some magnificent views are had of Mount Washburne, which rises in the south, and nearly in the centre of the park, to the altitude of 10,346 feet, and of its near neighbor, Dunraven Peak (9,988 feet). Elephant's Back, as the ridge lying between the trail and the lake is known, hides for the most part the high summits lying in the southeasterly part of the park. Hot springs, some of which are strongly impregnated with sulphur, and many of which are boiling mud of various colors, dot the surface of Hayden valley, and steam is seen rising in almost every direction. The dinner station is situated at Trout Creek, a pure, crystal stream that winds along the upper reaches of the valley.

On approaching the Yellowstone River, the road forks, one branch going northward to the Falls and Grand Cañon, and the other southward to the lake. We take the latter route, and ride for about eight miles farther, at no great distance from the river. A mile or two south of the place where the roads fork, we come to a remarkable cluster of mud geysers and springs. One situated just west of the road is at the bottom of a pit about twenty feet deep. The waves of hot and steaming mud surge outward from a cavernous opening with great energy. The others are upon the east side of the road, between it and the river. One geyser is particularly active, throwing up sprays of mud almost continuously.

Yellowstone Lake.

Yellowstone Lake, the largest body of water in North America at this altitude (7,740 feet), and one of the largest in the world at so high an elevation above sea level, presents a superficial area of 139 square miles, and a shore line of nearly 100 miles. It is shaped roughly, like an outspread hand, with a clearly defined though overgrown thumb, but with hardly the regulation number of fingers. The outlet is at the wrist, and the new hotel is pleasantly situated a short distance therefrom. It occupies a bold bluff upon the shores of the lake, and overlooks a wide expanse of its fair surface and the beautiful mountains beyond. The lofty summits in the southward extension of the Absorakas, culminating in Mounts Doane, Langford, Stevenson, Silver Tip, Chittenden, and Cathedral Peak, — all over 10,000 feet high, — and Eagle Peak, — which rises to the still greater height of 11,100 feet, — occupy the southeast corner of the park reservation beyond the lake. These and other beautiful peaks are seen at a distance of twenty miles or more, as the Savoy Alps are viewed across Lake Lucerne. Indeed, the resemblance between Yellowstone Lake and the Swiss lakes is quite marked. Southward are seen Mount Hancock and Mount Sheridan, the latter showing over the right shoulder of Flat Mountain. There are several islands in the lake; and the eastern shores, which are plainly in sight, are very romantic and inviting. Between two and three miles from the hotel is the Natural Bridge, which has been worn out by a little stream descending from the mountains to the lake; and at the "Thumb," seventeen miles distant, is another group of geysers.

On leaving the hotel at the lake, we shall descend the Yellowstone valley to the Falls and Grand Cañon, about seventeen miles distant. We first retrace our way to the point where we approached the Yellowstone River from Hayden valley. This is about midway on our route. Not far north of this place is Sulphur Mountain, a deposit of almost pure sulphur 100 feet high. At the base of the hill, and near the road, is a sulphur spring which boils and surges furiously. There are several other springs in the vicinity.

The Yellowstone Falls.

The new hotel is situated upon an elevated plateau west of the Grand Cañon of the Yellowstone, and about half a mile from the Lower Fall. It is one of the best-appointed hotels in the park, and has good accommodations for a much larger number of guests than the old house.

For miles above the Upper Fall the river flows in a strong and steady current between low and grass-covered banks. A few hundred yards above the first cataract three isolated and water-worn rocks tower above the waters like the piers of some ancient bridge. At the head of the fall the river has a width of about eighty feet, and the waters plunge over a shelf, between walls that are from 200 to 300 feet in height, upon a partially submerged reef 109 feet below. Dense clouds of spray and mist veil fully one third of the cataract from view.

Half a mile below this fall is the Lower or Great Fall, which is grander and more impressive than the other, though not more picturesque. Here the waters pour into the fearful abyss of the Grand Cañon, the sheer descent being 308 feet. The wooded slopes of the gorge tower far above the flood, and one has to descend a steep incline to reach a platform which serves as a good view point at the verge of the fall. The best views, however, are had from the banks below, where many jutting points afford an outlook upon the wonderful cañon. Clouds of mist ascend from the foot of the falls, and the walls are covered with a rank growth of mosses and *algæ.*

Midway between the two falls the road crosses Cascade Creek, which flows down to the Yellowstone from the slopes of Mount Washburne. There are here three beautiful little falls known as the Crystal Cascades, 129 feet in height; and directly beneath the bridge is the "Grotto Pool."

The Grand Cañon of the Yellowstone.

Of the purely topographical features of the Grand Cañon of the Yellowstone, Mr. Henry Gannett (in Hayden's *Twelfth Annual Report*) says: "Commencing at the falls, it extends down nearly to the mouth of the East Fork, a distance, as the river flows, of twenty-four miles. Indeed, from the falls to the mouth of Gardiner's River the Yellowstone is in a continuous cañon; but the partial break at the mouth of the East Fork separates it into two parts, known as the Grand and the Third Cañons. The former occupies the line of greatest depression in a volcanic plateau, which slopes to the northward and southward from the Washburne group of mountains, and to the westward from the Amethyst Ridge of the Yellowstone range. Its course is northeast as far as the extremity of the Washburne group; and after passing that it turns north, with a very slight inclination west. The height of the plateau at the falls is about 7,800 feet. It increases slightly northeastward, until, in passing the mountains, it has an elevation of about 8,000 feet. Thence northward it decreases in height rapidly, and at the mouth of Tower Creek it reaches but 7,200 feet. At the head of the Upper Fall the river level is but a few feet below the top of the plateau. This fall adds 112, and the lower fall 300, feet to the depth of the chasm. From the foot of this fall to the mouth of East Fork the total descent is 1,304 feet in a distance of twenty-four miles, being an average of 54.3 per mile. As far as the extremity of the Washburne Mountains, a distance of twelve miles, the cañon continues to increase in depth, both by the fall of the stream and the rise of the plateau; and the extreme depth, 1,200 feet, is attained at this point. Thence the depth decreases rapidly, and at the mouth of Tower Creek it is but 500 or 600 feet deep on the west side, and about 1,000 feet on the east side. The width of the cañon at the top varies from one fourth of a mile to one mile; and the angle of slope of the walls from the top to the water's edge ranges from 45 degrees to 75 degrees, with a horizontal line."

These are the cold topographical facts and figures regarding this greatest of all the park marvels, and they are quickly forgotten when the beholder gazes down into the gigantic rift. Neither pen nor pencil can do justice to its stupendous grandeur or its marvelous coloring, wherein it differs essentially from any similar scenic feature of the world's diversified surface. The mountainous region of Colorado has deeper cañons, while the Grand Cañon of the Colorado River, in Northern Arizona, has twice and thrice its depth; but they cannot be compared in impressive beauty with the marvelously pictured rift through which the Yellowstone winds its way after its last grand leap. A narrow trail runs along the western edge, and there are many jutting points from which new vistas are opened through this enchanted land. The walls are in places perpendicular, though generally sloping; while at the bottom is the fretted and fuming river, a ribbon of silvery whiteness or deep emerald green. Along the bottom of the cañon are domes and spires of colored rock, some of them hundreds of feet in height, yet reduced to much smaller proportions by the distance. On the apex of one of these pillars is an eagle's nest. In one place, near the top, a great rock spire, twice as high as Trinity steeple, has split away from the mass of rock behind it, and seems to be ready to topple over into the abyss at any moment, so insecurely is it poised on the shallow shelf beneath. But the gorgeous coloring of the cañon walls is its distinguishing feature. The beholder is no longer left in doubt as to the reason for bestowing the name of Yellowstone upon this remarkable river. The beautifully saffron-tinted walls give the explanation. There are other tints in opulence. Crimsons and greens are seen with all their gradations and blendings. Emerald mosses and foliage form the settings for dashes of bright rainbow colors. The yellows, due to sulphur deposits, predominate; but the oxidation of iron through the many hot springs, which send up their clouds of steam even here, provides a liberal sprinkling of reds. It seems as if a gorgeous sunset or a shattered rainbow had fallen into the abyss. With the grand grouping of crags and pinnacles, tinted walls, and the beautiful falls, the picture is one that once seen can never be forgotten. Says the Rev. Almon Gunnison (in *Rambles Overland*): "Language is but a clumsy thing with which to paint the glories of this wonder-place. The richest pigments of artists of largest fame have failed; and while men have smiled at the flaming canvas, and said, 'It is impossible,' the baffled painter has grieved that his poor brush had failed to tell half the story of this exceeding loveliness."

M. M. Ballou, in *The New Eldorado*, gives the following animated word picture of the scene as viewed from below the fall: "The grouping of crags, pinnacles, and inaccessible points is grand and inexpressibly beautiful. Eagles' nests with their young are visible at eyries quite out of reach save to the monarch bird itself. On other isolated points far below us are seen the nests of fish-hawks, whose builders look like swallows in size as they float upon the air, or dart for their prey into the swift, tumultuous stream that threads the valley. Gazing upon the scene, the vastness of which is bewildering, a sense of reverence creeps over us, — a reverence for that Almighty hand whose power is here recorded in such unequaled splendor. At last it is a relief to turn away from looking into this sheer depth and reach a securer basis for the feet. Still we linger until the sunset shadows lengthen and pass away, followed by the silvery moonlight. Every hour of the day has its peculiar charm of light and shade as seen upon the cañon and its churning waters."

Dr. Hayden says in one of his reports: "No language can do justice to the wonderful grandeur and beauty of the cañon below the Lower Falls, the very nearly vertical walls slightly sloping down to the water's edge on either side, so that from the summit the river appears like a thread of silver foaming over its rocky bottom; the variegated colors of the sides — yellow, red, brown, white — all intermixed and shading into each other; the Gothic columns of every form standing out from the sides of the walls with greater variety and more striking colors than ever adorned a work of human art. The margins of the cañon on either side are beautifully fringed with pines. . . . The decomposition and the colors of the rocks must have been due largely to hot water from the springs, which has percolated all through, giving to them their present variegated and unique appearance. Standing near the margin of the Lower Falls and looking down the cañon,— which appears like an immense chasm or cleft in the basalt, with its sides 1,500 to 1,800 feet high, and decorated with the most brilliant colors that the human eye ever saw, with the rocks weathered into an almost unlimited variety of forms, with here and there a pine sending its roots into the clefts on the sides, as if struggling with a sort of uncertain success to maintain an existence — the whole presents a picture that it would be difficult to surpass in nature. Mr. Thomas Moran, the celebrated artist and noted for his skill as a colorist, exclaimed with a kind of regretful enthusiasm, that these beautiful tints were beyond the reach of human art. It is not the depth alone that gives such an impression of grandeur to the mind, but it is also the picturesque forms and coloring. . . . It is a sight far more beautiful than, though not so grand or impressive as, that of Niagara Falls."

At the Mammoth Hot Springs Again.

Tuesday will be devoted in part to the journey from the Grand Cañon Hotel to Mammoth Hot Springs. The route is *via* the Norris Geyser Basin Hotel, twelve miles distant from the cañon. An excellent road extends across from the Yellowstone to the Norris Basin, where we reach the thoroughfare by which we journeyed southward, so that the farther ride of nineteen miles is over familiar ground. About midway on the route from the cañon to Norris Geyser Basin are the Virginia Cascades, which are situated on the upper waters of the Gibbon. The stream courses down a rocky incline for 200 feet or more; and the road, after approaching the cascade at the top, descends the hill in front of the fall. Just beyond, the road makes a sharp bend beyond a rock barrier called Cape Horn.

The parties will reach the hotel at Mammoth Hot Springs Tuesday afternoon, and remain until noon of the following day.

Over the Northern Pacific Railroad Eastward.

Leaving the hotel at Mammoth Hot Springs Wednesday noon by stage, we shall proceed to Cinnabar, where our special Pullman cars will be in waiting for the return journey over the Northern Pacific Railroad eastward to St. Paul. On leaving Cinnabar, the train will descend the Yellowstone valley to Livingston. The route to Minneapolis and St. Paul will be the same one taken in the outward journey, and Tuesday will be passed upon the road through Montana and North Dakota. Meals will be served during this journey in one of the elegant dining-cars of the Northern Pacific Railroad. A considerable portion of the route that was passed over in the night on the west-bound trip will be seen by daylight on the return, including a large part of the wheat country, the lake region, and the upper Mississippi valley, in Minnesota. The famous "Bad Lands" of Dakota will also be passed through in the daytime.

From St. Paul to Chicago.

The return parties will reach St. Paul late in the afternoon of Friday (August 1, 15, and 29, and September 12 and 26), and at once proceed over the Chicago, Milwaukee,

& St. Paul Railway, leaving the Union station at 7.30 P. M. The route is over the River and La Crosse Divisions, and Chicago will be reached at 9.30 A. M. Saturday.

From Chicago Eastward.

There will be a transfer by Parmelee's omnibuses from the Union station (on Canal street, between West Madison and West Adams streets) to the Dearborn station (Polk and Dearborn streets), where dinner will be provided, and from whence the parties will depart *via* the Chicago & Grand Trunk Railway at 3.15 P. M. Supper will be provided on a Chicago & Grand Trunk dining-car. The route eastward is over the road mentioned and the Great Western Division of the Grand Trunk Railway.

Persons returning from Chicago independently will be required to exchange their east-bound sleeping-car coupons either at the city office of the Chicago & Grand Trunk Railroad, 103 South Clark street, Chicago, E. H. Hughes, agent, to whom any application in advance for sleeping-car berths can be addressed, or at the Dearborn station. In order to avail themselves of the stop at Niagara Falls, passengers should leave Chicago by the "Limited Express" at 3.15 P. M. Niagara Falls is the only point east of Chicago where "stop-over" privileges can be allowed. The train leaving Chicago at 8.15 P. M. has a through sleeping-car for Boston.

Niagara Falls.

Sunday and a large part of Monday will be passed at Niagara Falls, the parties making their headquarters either at the Cataract House or the International Hotel. Both hotels are situated in proximity to the great cataract, Prospect Park, Goat Island, and the other points of interest.

Leaving Niagara Falls by the West Shore route at 4.48 P. M. Monday, the parties will proceed eastward, and arrive in Boston (Fitchburg Railroad station, Causeway street) at 9.50 the succeeding morning.

Price of Tickets.

The price of tickets for the excursion described in the foregoing pages is TWO HUNDRED AND TWENTY-FIVE DOLLARS. This sum covers all needed expenses of the entire round trip from Boston back to Boston, inclusive of the following items: All transportation by rail and stage lines; a double berth (one-half section) in the Wagner or Pullman palace sleeping-cars during the railway journeys; all wagon transportation within the park in accordance with the itinerary; hotel accommodations in St. Paul or Minneapolis, at Mammoth Hot Springs, Lower Geyser Basin, Upper Geyser Basin, Yellowstone Lake, and Yellowstone Grand Cañon (the five park hotels), and at Niagara Falls; incidental meals at hotels, dining-stations, stage stations, and in dining-cars; omnibus transfers in Chicago, St. Paul or Minneapolis, and Niagara Falls; transportation and care of all checked baggage, and the services of conductors.

ITINERARY.

Thursday, July 17. Excursion No. 1.
Thursday, July 31. Excursion No. 2.
Thursday, Aug. 14. Excursion No. 3.
Thursday, Aug. 28. Excursion No. 4.
Thursday, Sept. 11. Excursion No. 5.

First Day.— Leave Boston at 8.30 A. M. from the station of the Fitchburg Railroad, Causeway street, *via* the Hoosac Tunnel line, in cars of the Wagner Sleeping-Car Company. On arriving at the station members of the party should check their baggage to St. Paul. The checks will be taken up on the train, and the baggage will be delivered at the rooms of the owners in the hotel in St. Paul. Tags are supplied with the excursion tickets, and these, with the owner's name and home address plainly inscribed thereon, should be attached to every trunk, valise, or other piece of baggage, to serve as a ready means of identification. Dinner at the station dining-rooms, North Adams, Mass.; from Rotterdam Junction westward on West Shore Railroad; supper at the station dining-rooms, Syracuse.

Friday, July 18. Excursion No. 1.
Friday, Aug. 1. Excursion No. 2.
Friday, Aug. 15. Excursion No. 3.
Friday, Aug. 29. Excursion No. 4.
Friday, Sept. 12. Excursion No. 5.

Second Day.—En route westward. From Suspension Bridge *via* the Great Western Division of Grand Trunk Railway; breakfast at station dining-rooms, Point Edward; from Fort Gratiot westward on Chicago & Grand Trunk Railway; dinner at station dining-rooms, Battle Creek, Mich.; arrive in Chicago 6.25 P. M.; transfer by Parmelee's omnibuses from the Dearborn station (Polk and Dearborn streets) to the Union station (Canal street, between West Madison and West Adams streets); supper at dining-rooms in Union station; leave Chicago 11.00 P. M., *via* Chicago, Milwaukee & St. Paul Railway, in Pullman palace sleeping-cars.

Saturday, July 19. Excursion No. 1.
Saturday, Aug. 2. Excursion No. 2.
Saturday, Aug. 16. Excursion No. 3.
Saturday, Aug. 30. Excursion No. 4.
Saturday, Sept. 13. Excursion No. 5.

Third Day.—On the Chicago, Milwaukee & St. Paul Railway, *en route* through Wisconsin and Minnesota, passing by daylight over the River Division of that line, in view of the bluffs of the Mississippi, Lake Pepin, etc.; breakfast and dinner on dining-car; arrive at St. Paul 1.50 P. M.; transfer by Cook & Son's omnibus line to the Hotel Ryan, Eugene Mehl, proprietor.

Note.—Members of the party who desire to remain over Sunday in Minneapolis can continue on from St. Paul, arriving in Minneapolis at 2.35 P. M. There will be a transfer by Mattison's omnibus line from the Chicago, Milwaukee & St. Paul Railway station to the West Hotel, John T. West, proprietor.

Sunday, July 20. Excursion No. 1.
Sunday, Aug. 3. Excursion No. 2.
Sunday, Aug. 17. Excursion No. 3.
Sunday, Aug. 31. Excursion No. 4.
Sunday, Sept. 14. Excursion No. 5.

Fourth Day.—In St. Paul or Minneapolis.

Monday, July 21. Excursion No. 1. Monday, Aug. 4. Excursion No. 2. Monday, Aug. 18. Excursion No. 3. Monday, Sept. 1. Excursion No. 4. Monday, Sept. 15. Excursion No. 5.	*Fifth Day.*—In St. Paul or Minneapolis. Omnibus transfer to the Union station, and leave St. Paul at 4.15 P. M. and Minneapolis at 4.55 P. M., *via* Northern Pacific Railroad, in Pullman palace sleeping-cars; supper on dining-car.
Tuesday, July 22. Excursion No. 1. Tuesday, Aug. 5. Excursion No. 2. Tuesday, Aug. 19. Excursion No. 3. Tuesday, Sept. 2. Excursion No. 4. Tuesday, Sept. 16. Excursion No. 5.	*Sixth Day.*—On Northern Pacific Railroad *en route* through North Dakota and Montana. Meals on dining-car.
Wednesday, July 23. Excursion No. 1. Wednesday, Aug. 6. Excursion No. 2. Wednesday, Aug. 20. Excursion No. 3. Wednesday, Sept. 3. Excursion No. 4. Wednesday, Sept. 17. Excursion No. 5.	*Seventh Day.*—Arrive at Livingston in the morning; breakfast at the Albemarle Hotel; leave Livingston *via* the National Park Branch of the Northern Pacific Railroad; arrive at Cinnabar 11.30 A. M.; leave Cinnabar by George W. Wakefield's stage line at 11.45 A. M.; arrive at Mammoth Hot Springs Hotel 1.00 P. M.
Thursday, July 24. Excursion No. 1. Thursday, Aug. 7. Excursion No. 2. Thursday, Aug. 21. Excursion No. 3. Thursday, Sept. 4. Excursion No. 4. Thursday, Sept. 18. Excursion No. 5.	*Eighth Day.*—Leave Mammoth Hot Springs in George W. Wakefield's stages at 8.00 A. M. for the tour through the park; arrive at Norris Geyser Basin 12.30 P. M; dinner there; leave Norris Geyser Basin 1.30 P. M., passing near the principal geysers in this basin, including the Mud Geyser, the "Hurricane," the "Monarch," the "Minute-Man," etc., and later near the Gibbon "Paint Pots," Monument Geyser Basin, and the Gibbon Falls; arrive at the Lower Geyser Basin Hotel 6.30 P. M.
Friday, July 25. Excursion No. 1. Friday, Aug. 8. Excursion No. 2. Friday, Aug. 22. Excursion No 3. Friday, Sept. 5. Excursion No. 4. Friday, Sept. 19. Excursion No. 5.	*Ninth Day.*—Leave Lower Geyser Basin at 8.00 A. M., and visit the "Fountain" Geyser, the "Paint Pots," "Excelsior" Geyser (or "Hell's Half Acre"), "Turquoise" Spring, "Prismatic" Spring, and other objects of interest between the Lower and Upper

Geyser Basins; arrive at the Upper Geyser Basin Hotel 11.00 A. M. The hotel is situated near "Old Faithful," the "Bee Hive," "Giantess," "Castle," and others of the great geysers.

Saturday, July 26. Excursion No. 1. Saturday, Aug. 9. Excursion No. 2. Saturday, Aug. 23. Excursion No. 3. Saturday, Sept. 6. Excursion No. 4. Saturday, Sept. 20. Excursion No. 5.	*Tenth Day.*— Leave Upper Geyser Basin 8.00 A. M.; arrive at Trout Creek at 1.00 P. M.; dinner there; leave Trout Creek 2.00 P. M.; arrive at Yellowstone Lake Hotel 4.00 P. M.
Sunday, July 27. Excursion No. 1. Sunday, Aug. 10. Excursion No. 2. Sunday, Aug. 24. Excursion No. 3. Sunday, Sept. 7. Excursion No. 4. Sunday, Sept. 21. Excursion No. 5.	*Eleventh Day.*— At Yellowstone Lake.
Monday, July 28. Excursion No. 1. Monday, Aug. 11. Excursion No. 2. Monday, Aug. 25. Excursion No. 3. Monday, Sept. 8. Excursion No. 4. Monday, Sept. 22. Excursion No. 5.	*Twelfth Day.*— Leave Yellowstone Lake at 8.00 A. M.; arrive at Grand Cañon Hotel at 12.00 M.
Tuesday, July 29. Excursion No. 1. Tuesday, Aug. 12. Excursion No. 2. Tuesday, Aug. 26. Excursion No. 3. Tuesday, Sept. 9. Excursion No. 4. Tuesday, Sept. 23. Excursion No. 5.	*Thirteenth Day.*— Leave Grand Cañon Hotel 10.30 A. M.; arrive at Norris Geyser Basin 12.30 P. M.; dinner there; leave Norris Geyser Basin 1.30 P. M.; arrive at Mammoth Hot Springs Hotel 5.30 P. M.
Wednesday, July 30. Excursion No. 1. Wednesday, Aug. 13. Excursion No. 2. Wednesday, Aug. 27. Excursion No. 3. Wednesday, Sept. 10. Excursion No. 4. Wednesday, Sept. 24. Excursion No. 5.	*Fourteenth Day.*— Leave Mammoth Hot Springs 2.00 P. M.; arrive at Cinnabar 3.15 P. M.; leave Cinnabar, *via* National Park Branch of the Northern Pacific Railroad, 3.45 P. M.; arrive at Livingston 6.45 P. M.; supper at Albemarle Hotel; remain on the cars at night.

THURSDAY, July 31. Excursion No. 1.
THURSDAY, Aug. 14. Excursion No. 2.
THURSDAY, Aug. 28. Excursion No. 3.
THURSDAY, Sept. 11. Excursion No. 4.
THURSDAY, Sept. 25. Excursion No. 5.

Fifteenth Day.— Leave Livingston 1.15 A. M. on main line of Northern Pacific Railroad; *en route* through Montana and North Dakota; meals on the dining-car.

FRIDAY, Aug. 1. Excursion No. 1.
FRIDAY, Aug. 15. Excursion No. 2.
FRIDAY, Aug. 29. Excursion No. 3.
FRIDAY, Sept. 12. Excursion No. 4.
FRIDAY, Sept. 26. Excursion No. 5.

Sixteenth Day.— On the Northern Pacific Railroad *en route* through North Dakota and Minnesota. Breakfast and dinner on dining-car; arrive at St. Paul 5.10 P. M.; supper at Union station dining-rooms; leave St. Paul, *via* Chicago, Minneapolis & St. Paul Railway, at 7.30 P. M.

SATURDAY, Aug. 2. Excursion No. 1.
SATURDAY, Aug. 16. Excursion No. 2.
SATURDAY, Aug. 30. Excursion No. 3.
SATURDAY, Sept. 13. Excursion No. 4.
SATURDAY, Sept. 27. Excursion No. 5.

Seventeenth Day.— Breakfast on dining-car; arrive in Chicago (Union station, Canal street, between West Madison and West Adams streets) at 9.30 A. M.; transfer by Parmelee's omnibus line from the Union station to the Dearborn station (Polk and Dearborn streets); dinner at station dining-rooms; leave Chicago, *via* Chicago & Grand Trunk Railway, at 3.15 P. M.; supper on dining-car.

NOTE.— Members of the party who return independently from Chicago will be required to exchange their east-bound sleeping-car coupons at the city ticket-office of the Chicago & Grand Trunk Railway, 103 South Clark street, Chicago, E. H. Hughes, agent (to whom all applications in advance for sleeping-berths should be addressed), or at the station ticket-office, Polk and Fourth avenue. Persons desirous of availing themselves of the "stop-over" privilege at Niagara Falls should take the "Limited Express," leaving Chicago at 3.15 P. M., and, arriving at Niagara Falls the next morning, await there the arrival of the Atlantic express in the afternoon. Niagara Falls is the only point east of Chicago where "stop-over" privileges are allowed. The train leaving Chicago at 8.15 P. M. has a through sleeping-car for Boston.

SUNDAY, Aug. 3. Excursion No. 1. SUNDAY, Aug. 17. Excursion No. 2. SUNDAY, Aug. 31. Excursion No. 3. SUNDAY, Sept. 14. Excursion No. 4. SUNDAY, Sept. 28. Excursion No. 5.	*Eighteenth Day.*— At the Cataract House or International Hotel, Niagara Falls.
MONDAY, Aug. 4. Excursion No. 1. MONDAY, Aug. 18. Excursion No. 2. MONDAY, Sept. 1. Excursion No. 3. MONDAY, Sept. 15. Excursion No. 4. MONDAY, Sept. 29. Excursion No. 5.	*Nineteenth Day.*— At the Cataract House or International Hotel, Niagara Falls. Omnibus transfer to the New York Central & Hudson River Railroad station, and leave Niagara Falls, *via* the West Shore line, at 4.48 P. M.; supper at the station dining-rooms, Buffalo.
TUESDAY, Aug. 5. Excursion No. 1. TUESDAY, Aug. 19. Excursion No. 2. TUESDAY, Sept. 2. Excursion No. 3. TUESDAY, Sept. 16. Excursion No. 4. TUESDAY, Sept. 30. Excursion No. 5.	*Twentieth Day.*— Arrive in Boston (Fitchburg Railroad station, Causeway street) at 9.50 A. M.

Distance Table of the Yellowstone National Park Tour.

	MILES.
From Boston to Rotterdam Junction, N. Y., Fitchburg Railroad	212
" Rotterdam Junction to Suspension Bridge, West Shore Railroad	290
" Suspension Bridge to Port Huron, Mich., Great Western Division of the Grand Trunk Railway	181
" Port Huron to Chicago, Chicago & Grand Trunk Railway	335
" Chicago to St. Paul, Chicago, Milwaukee & St. Paul Railway	410
" St. Paul to Livingston, Mon., Northern Pacific Railroad	1,032
" Livingston to Cinnabar, Yellowstone Park Branch of Northern Pacific Railroad	51
" Cinnabar to Mammoth Hot Springs, stage	7
" Mammoth Hot Springs to Lower Geyser Basin, stage	36
" Lower Geyser Basin to Upper Geyser Basin, *via* Fountain Geyser and old road, stage	12
" Upper Geyser Basin to Lower Geyser Basin, *via* new road, Lower Geyser Basin to Yellowstone Lake, *via* the Trout Creek route, stage	45
Distances carried forward	2,611

	MILES.
Distances brought forward	2,611
From Yellowstone Lake to Grand Cañon Hotel, stage	17
“ Grand Cañon Hotel to Mammoth Hot Springs, stage	31
“ Mammoth Hot Springs to Cinnabar, stage	7
“ Cinnabar to Livingston, Yellowstone Park Branch of Northern Pacific Railroad	51
“ Livingston to St. Paul, Northern Pacific Railroad (main line)	1,032
“ St. Paul to Chicago, Chicago, Milwaukee & St. Paul Railway	410
“ Chicago to Port Huron, Mich., Chicago & Grand Trunk Railway	335
“ Port Huron, Mich., to Suspension Bridge, Great Western Division of Grand Trunk Railway	181
“ Suspension Bridge to Rotterdam Junction, N. Y., West Shore Railroad	290
“ Rotterdam Junction, N. Y., to Boston, Fitchburg Railroad	212
Total	5,177

In the course of the tour the excursion parties will pass through parts of the following States and Territories: *States* — Massachusetts, Vermont, New York, Michigan, Indiana, Illinois, Wisconsin, Minnesota, North Dakota, and Montana (10); *Territory* — Wyoming (1); and also the Province of Ontario in Canada.

Tickets must be taken for Excursion No. 1 on or before Saturday, July 12; for Excursion No. 2 on or before Saturday, July 26; for Excursion No. 3 on or before Saturday, August 9; for Excursion No. 4 on or before Saturday, August 23; and for Excursion No. 5 on or before Saturday, September 6.

W. RAYMOND.
I. A. WHITCOMB.

☞Tickets for the excursion, additional copies of this circular, and all needed information can be obtained of

W. RAYMOND, 296 Washington Street (opposite School Street), Boston, Mass.

NEW YORK OFFICE, 257 BROADWAY, RAYMOND & WHITCOMB.

PHILADELPHIA OFFICE,
111 SO. NINTH STREET, under Continental Hotel,
RAYMOND & WHITCOMB.

London Office, 142 Strand, W. C.
HENRY CAZE & SON,
European Agents for Raymond's American Excursions.

AGENTS ON THE PACIFIC COAST.

CHARLES C. HARDING, General Agent,
26 Montgomery Street, Room 6, San Francisco.

SAN FRANCISCO OFFICES,
26 MONTGOMERY STREET, ROOM 6,
CARROLL HUTCHINS, Agent.
And also 36 Montgomery Street (corner Sutter Street),
CLINTON JONES, Agent.

LOS ANGELES OFFICE,
44 SOUTH SPRING ST.,
RAYMOND & WHITCOMB,
F. W. THOMPSON, Agent.

PORTLAND (Or.) OFFICE,
3 WASHINGTON STREET,
CHARLES KENNEDY, Agent.

Clothing for the Journey.

Although the excursions are to be made in the warm months of the year, there will be reason to guard against cool weather within the Yellowstone National Park, where frosts are of almost nightly occurrence through the summer season. It would be a good plan to carry a suit of clothing especially for service within the park, and this should be of such stout material as to stand a bit of "rough work," if any such be thought desirable in the tramps among the springs and geysers. Stout boots or shoes are prime necessities, inasmuch as the surface of the geyser mounds, and in many places large tracts of territory to be walked over in visiting the chief points of interest, are rough. Some persons may also find rubber overshoes of use, as there are many wet places around the geysers and hot springs. For gentlemen, woolen traveling shirts are far more serviceable than white ones. There are no "dress occasions" within the park, at least beyond the hotel at Mammoth Hot Springs; and only to that point will the heavy or checked luggage be conveyed, hand parcels only being taken in the wagons which carry the visitors around the park. Rubber overcoats and waterproofs, will, of course, suggest themselves. "Dusters" will doubtless be of use in the railway journeys, as they are in all parts of the country.

Guide Books, etc.

The Great Northwest, a guide book and itinerary for the use of travelers over the Northern Pacific Railroad and its allied lines, and the *Official Guide to the Yellowstone National Park*, both published by Riley Brothers, St. Paul, are the best works of their class. Some of the publications of the Northern Pacific Railroad Company, intended to attract attention to the park, have been prepared with much care, and a map published upon the back of a "folder" detailing *Alice's Adventures in the New Wonderland* is the best general map obtainable.

The Fifth Annual United States Geological Report (for 1871) contains Dr. F. V. Hayden's original account of the Yellowstone Park region; and the subsequent volumes also contain much relating thereto, the fullest and most exhaustive account yet prepared appearing in the most recently published *Report* (the Twelfth for 1878). Part II. (503 pages), together with numerous maps, includes interesting contributions by W. H. Holmes on the Geology of the Park, Dr. A. C. Peale on Thermal Springs, and Henry Gannett on the Topography of the Park.

The reports of Captain William A. Jones, General W. F. Reynolds, Rossiter W. Raymond, Captain J. W. Barlow, Captain D. P. Heap, Professor F. B. Comstock, General W. T. Sherman, General P. H. Sheridan, Superintendents N. P. Langford, P. W. Norris, and P. H. Conger, and others will be found in documents printed by order of the government.

The American Encyclopædia, *Johnson's New Universal Encyclopædia*, *Picturesque America*, *Scribner's Magazine* for 1871, '72, and '73, *Lippincott's Magazine* for 1880, *The Southern Magazine* for 1871, *Appleton's Journal* for 1881, *Nature* for 1872, *Chamber's Journal* for 1882, and the *United States Census Report* for 1880 all contain articles relating to the park; and the later works on geology by Geikie, Dana, and Le Conte have scientific references to its marvels.

There are many books of travel relating to the park, and among them are *The Great Divide*, by Lord Dunraven; James Richardson's *Wonders of the Yellowstone; Horseback rides through the Yellowstone Park*, by H. J. Norton; *Camp and Cabin*, by Rossiter W. Raymond; *Rambles in Wonderland*, by Edwin J. Stanley; *A Pilgrimage to Geyser Land; or, Montana on Muleback*, by Ellsworth Spencer; *Rambles Overland*, by Rev. Almond Gunnison, D. D.; and *The New Eldorado*, by Maturin M. Ballou. The latter is a new work devoted largely to Alaska, but incidentally describing a visit to the park.

A complete list of all works having reference to the Yellowstone Park (published previous to 1882), and also lists of authorities on the thermal springs of all parts of the world, will be found in *Hayden's Twelfth Report* (Part II., pages 427-499).

Professor Arnold Hague's paper — *Geological History of the Yellowstone National Park* — appears in the "Transactions of the American Institute of Mining Engineers for 1887."

A History of the Northern Pacific Railroad, by E. V. Smalley, is an account of this great enterprise from the time of its inception, in 1834, to the opening of the road, in 1883.

F. Jay Haynes, 392 Jackson street, St. Paul, has made a specialty of photographing the geysers and other wonders of the park. His views are sold at Mammoth Hot Springs. Catalogues will be sent from St. Paul on application.

Time on Which Trains and Stages are Run.

Between Boston and Fort Gratiot (Port Huron), Mich., Eastern or 75th meridian time; between Fort Gratiot and Mandan, Dak., Central or 90th meridian time, one hour slower than Eastern time; from Mandan westward and through the Yellowstone National Park, Mountain or 105th meridian time, two hours slower than Eastern time.

GRAND SUMMER EXCURSION

TO

ALASKA.

The Outward Route from Ocean to Ocean over the CANADIAN PACIFIC RAILWAY, And the Return over the NORTHERN PACIFIC RAILROAD.

WITH A WEEK IN THE YELLOWSTONE NATIONAL PARK.

An Unsurpassed Tour of Fifty Days over the most Picturesque Routes in the World.

Date of Leaving Boston, Saturday, July 19.

WE have planned an unusually attractive excursion for the coming summer, with the North Pacific Coast and Alaska as the chief objective points. Incidentally there will be a journey through the Canadian Dominion, over the entire length of the picturesque Canadian Pacific Railway, and, after the matchless voyage to Alaska and back, a return trip over the no less interesting Northern Pacific Railroad route, with a divergence of a week through the Yellowstone National Park. The voyage to Alaska will be made on one of the finest passenger steamers of the Pacific Coast

Steamship Company's fleet, "The Queen," Captain James Carroll. The voyage will cover about twelve days, and all the famous scenic points in Southern Alaska, which have made the Alaska trip so famous, will be visited, including Fort Wrangel, Juneau, Douglas Island, Sitka, Lynn Canal, and the great Muir Glacier on Glacier Bay. There will be time for landing and sight-seeing at all the chief points of interest, and everywhere tourists will have unsurpassed opportunities for scanning the wonderful scenery of our northernmost possessions, and for studying the quaint and primitive native life. The voyage to Alaska is chiefly through inland waters, and the entire route is lined with scenes of wonderful and awe-inspiring character — mountains of great height, with fathomless depths at their very feet; cascades, which seem to tumble from the sky itself; densely wooded shores, whose solitudes have never yet been invaded by man; and vast fields of snow and ice, which glow in the sunlight like plains of gold and silver. Thousands of mountain peaks are seen that no man has ever visited, and that are as yet even unnamed. In Alaska, great glaciers, many fold larger than the grandest ice fields of Switzerland, flow down to the sea, mingling with the floods of the ocean, and breaking off in huge masses of fantastical shapes. In no part of the world is there so much wild grandeur encompassed in a voyage of equal duration.

The party will leave Boston Saturday, July 19, and Sunday will be passed in the Canadian "City of Churches," Montreal. The ensuing week will be passed in the journey over the great Canadian Pacific Railway, which traverses the long line of provinces, extending from the Atlantic to the Pacific Ocean. After passing through the great wilderness lying north of Lake Superior and the Lake of the Woods, the party will make a brief visit to Winnipeg, the interesting capital of Manitoba. From this point the railway stretches across the rich prairie section of

Manitoba and over the plains of Assiniboia and Alberta, which are divisional parts of the great Northwest Territory of former years. At Calgary the traveler approaches the Rocky Mountains, which are here very lofty; and thenceforward, for over 700 miles, the scenery is of the grandest character. The mountain crests are covered with huge glaciers, and the railway passes through cañons and ravines wonderful in their picturesque grandeur and wildness. Descending to the Columbia River, and crossing that noble stream, another mountain range — the precipitous Selkirks — is ascended. Here the scenery is even grander than in the first range. Gigantic cascades leap down the mountain-side, and great fields of ice are seen on some of the slopes. The train runs near several of the glaciers. The Columbia is again crossed, the Selkirks here occupying a great bend of the river, and there is more wild scenery in the Gold range. Then the lake region of British Columbia is crossed, and the train once more plunges into a remarkably picturesque mountain district — the Coast range. It follows the windings of the Fraser River through this region amid scenes of the wildest beauty, before emerging upon the coast of the Gulf of Georgia, which forms the northern extension of beautiful Puget Sound. Two days will be passed at the famous Banff Hot Springs, which are situated in one of the wildest nooks of the Rocky Mountains, and another at Glacier House, in proximity to the great glacier.

The party will reach Vancouver July 29, and proceed therefrom by steamer to Victoria, the island capital of British Columbia, where the Alaska voyage will be begun August 1. The ensuing twelve days will be spent in viewing the grand scenery and the quaint pictures of aboriginal life, on the British Columbian Coast and in Alaska.

Returning from Alaska to Puget Sound, visits will be made to Port Townsend, Seattle, and Tacoma, and later there will be a trip over the Pacific Division of the Northern Pacific Railroad to Portland, Oregon's handsome metropolis. An excursion up the Columbia River through the picturesque regions of the Cascades, and as far as Dalles City, will also be a feature of this part of the tour.

Then will follow a journey over the entire length of the Northern Pacific Railroad from Portland to St. Paul, a distance of over 2,000 miles. The Cascade Division, with its grand mountain views, the lake region of Idaho, the river cañons and mountain fastnesses of Montana, the great Yellowstone valley, and the vast wheat fields of North Dakota are among the many incidental features of this notable railway journey. At Livingston the party will turn aside for a week's tour through the Yellowstone National Park. The Mammoth Hot Springs, Norris Geyser Basin, Lower Geyser Basin, Upper Geyser Basin, Yellowstone Lake, and Yellowstone Falls and Cañon will in turn be visited.

On the homeward trip there will be brief visits to St. Paul, Minneapolis, Chicago, and Niagara Falls.

A special circular will shortly be issued.

W. RAYMOND.
I. A. WHITCOMB.

Copies of the full descriptive circular, together with all needed information, can be obtained of

W. RAYMOND, 296 Washington St. (opposite School St.), Boston, Mass.

GRAND TOUR

ACROSS THE CONTINENT,

INCLUSIVE OF A WEEK IN THE

YELLOWSTONE NATIONAL PARK.

A Picturesque Trip with the Privilege of Remaining in California through the Winter and Spring Months.

The Party to Leave Boston Thursday, September 11.

OUR fifth and last trip to the Yellowstone National Park the present season will have a grand supplementary tour across the continent, with incidental visits to the most picturesque regions on the Pacific Coast. The party will leave Boston Thursday, September 11, and follow the same route westward taken by the previous excursion parties. A week will be passed within the park, with sojourns at the principal points, and a complete round of that region of marvels will be made.

Leaving the park Wednesday, September 24, the party will turn westward from Livingston, continuing its journey over the main line of the Northern Pacific Railroad. In the course of the tour the entire length of this great transcontinental line, from St. Paul to Tacoma, and from Tacoma to Portland, will be traversed, including the interesting route over the Cascade Mountains. The Belt Mountains and, farther west, the main range of the Rocky Mountains are crossed. Helena, the capital of Montana, is situated upon the railway 124 miles west of Livingston. The charming scenery around Lake Pend d'Oreille, in Idaho, and the passage of the Cascade Mountains, with its glorious views of Mount Tacoma, the mountain giant of the Pacific Northwest, are later features in this grand journey. On arriving at Tacoma (Saturday, September 27), there will be a season of rest at The Tacoma, a magnificent hotel situated upon the shores of Puget Sound, with a fine outlook upon the lofty mountain just referred to. A steamer trip across Puget Sound, with visits to Seattle, Port Townsend, and Victoria, will be the next feature. The scenery upon Puget Sound is of the grandest type. With an area of 2,000 square miles, it has an irregular and picturesque shore line about 1,800 miles in extent. In one direction Mount Tacoma is seen rising to the height of 14,444 feet above us. In another, Mount Baker is seen — a shapely peak, 10,800 feet high. At the head of the broad peninsula of the State of Washington, lying west of the sound, is the noble Olympic range, a mass of ridges and peaks from 6,000 to 8,000 feet high. Tacoma, Seattle, and Port Townsend are growing cities on the shores of this great inland sea; and just across the border, in the Dominion of Canada, are Victoria and Vancouver City. At other points are huge saw mills, the largest in the world, which, with all their destructive powers, seem to have made but little impression upon the vast forests of gigantic fir trees. The waters are everywhere very deep, and there is room enough to float the navies of the whole world. Mount Tacoma, the proud warder of this "Mediterranean of the North," lifts his brow into the region of perpetual snow. Five great glaciers glisten upon the upper slopes of this lofty mountain, or at morning and evening flush into roseate hues. Victoria is the capital of British Columbia, and is one of the most beautiful cities upon the Pacific Coast. The British government has an important naval station at

Esquimalt, a few miles distant from Victoria, and in the course of our stay there will be a carriage ride thither.

Returning to Tacoma by steamer, the party will go by rail thence to Portland, where there will be another halt (at the new and magnificent hotel, The Portland), with a side trip up the Columbia River. The symmetrical cone of Mount Hood and the massive dome of Mount St. Helen's are prominent objects in the outlook from Portland. On the way up the river, the former is seen in many varying aspects. Cape Horn, Rooster Rock, the Pillars of Hercules, Castle Rock, and the Falls of Multnomah are also among the grand scenic features of the middle Columbia. The up-river trip will be made by steamer, the party proceeding as far as Dalles City, and thus gaining views of all the grand scenery. The return journey will be made by rail.

The overland trip from Oregon to California will be a feature of great interest. There are many fine mountain views upon the route; and the most picturesque section of the journey, including the passage through the upper Willamette and Sacramento valleys, over the Siskiyou Mountains, and through the grand Mount Shasta region, will be made by daylight. Mount Shasta is 14,442 feet in elevation, and rises in a shapely snow-covered mass far above the beautiful stretches of Strawberry valley. It is an extinct volcano, and one of the loftiest and grandest mountain forms on the Pacific Coast. The railway line is a part of the great Southern Pacific system. We continue southward, with Shasta long in view, descending into the broad and fruitful valley of the Sacramento, which we traverse for its entire length.

San Francisco will be reached *via* Oakland, and during our sojourn in the handsome city by the Golden Gate we shall make our home at the magnificent Palace Hotel. There will be ample time, not only for an inspection of San Francisco, but also for a series of delightful excursions to other interesting points. A programme feature will be a trip to San Jose and Santa Cruz, with a stage excursion from the former to the Lick Observatory, on the summit of Mount Hamilton. A visit will also be paid to San Rafael.

The journey will be continued from San Francisco southward over the Southern Pacific Company's line, and the next halt will be made in the garden spot of the Pacific Coast — Southern California. There will be special visits to Santa Barbara, Pasadena, Los Angeles, San Diego, and other places of interest; and, as the excursion tickets permit the holder to remain upon the Pacific Coast until the ensuing spring, the charms of Southern California may be enjoyed to the fullest extent.

While the programme date of departure from Southern California on the homeward trip is November 5, yet individuals can prolong their stay, as already pointed out, with the opportunity of joining subsequent returning parties under special escort, or of traveling independently, the tickets being good upon any first-class train. If desired, a prolonged stay may be made at San Francisco, or in any other part of Central or Southern California. On the way southward, a divergence may be made from the main route at Berenda, for the purpose of visiting the Yosemite valley and Big Trees. A railroad line extends from Berenda to Raymond, and the farther journey is made by stage. It should be noted that the time chosen for our visit to California is at the height of the grape-gathering season, when the vineyards will have an especial charm.

The homeward route from Southern California will be over the Atchison, Topeka & Santa Fe line, which takes the traveler through very picturesque sections of Arizona, New Mexico, and Colorado, and in proximity to some of the quaint habitations of the Pueblo Indians and the still stranger places of abode of prehistoric races. The southern border-land is filled with romance and historic interest; and much of the old Spanish life, with its peculiar manners and customs, is yet seen in its half-Mexican towns.

Halts will be made at both Santa Fe and Las Vegas Hot Springs, a Sunday being passed at The Phœnix, in the last-mentioned place. After journeying through Arizona and New Mexico, crossing the Raton Mountains, from the latter into Colorado, and then traversing the great State of Kansas, Kansas City and the Missouri River are reached. We here transfer from the Santa Fe line to the popular Chicago, Rock Island & Pacific Railway, for the farther ride through Missouri, Iowa, and Illinois to Chicago. On leaving that city we journey eastward over the Chicago & Grand Trunk Railway.

A halt will be made at Niagara Falls, and time afforded there for an inspection of the great cataract and all the other points of interest. The party will reach Boston on the morning of Friday, November 14.

Send for special circular.

W. RAYMOND.
I. A. WHITCOMB.

The full descriptive circular and all other information desired can be obtained of

W. RAYMOND, 296 Washington St. (opposite School St.), Boston, Mass.

GRAND EXCURSION

TO THE

PACIFIC NORTHWEST AND CALIFORNIA,

VIA THE NORTHERN PACIFIC RAILROAD,

The Magnificent Overland Route from Oregon to San Francisco, and a Return through Southern California, Arizona, New Mexico, Colorado, etc. A Tour of Sixty-one Days, with the Option of Remaining in California through the Winter and Spring Months.

Date of Leaving Boston, Monday, October 13.

Price of Tickets (all Traveling Expenses Included), - - $450.00.

OUR second autumn transcontinental excursion over the Northern Pacific Railroad has been arranged for October, a most delightful month for traveling. The party will leave Boston Monday, October 13, and proceed westward over the Fitchburg, West Shore, Grand Trunk, and Chicago & Grand Trunk lines, reaching Chicago on the morning of the 15th. On the following day the westward journey will be resumed *via* the Rock Island & Albert Lea route. There will be a sojourn over Sunday at St. Paul, and also a visit to Minneapolis. Leaving the former city Monday, October 20, the party will journey over the Northern Pacific Railroad, passing through those empires of the Northwest, Minnesota, North Dakota, Montana, Idaho, and Washington. The great wheat section of North Dakota, the "Bad Lands," the Yellowstone valley, the Belt Mountains, the Rocky Mountains, the great gorges of Western Montana, the beautiful lake region of Northern Idaho, the magnificent valleys of the Spokane, the Columbia, and the Yakima, and the Cascade Mountains are upon this great route. The western terminus is at Tacoma, upon the shores of Puget Sound. We shall reach that point Friday, October 24, and, after a sojourn at "The Tacoma," visit Seattle, Port Townsend, and Victoria, making a steamer excursion over the whole length of the sound. Continuing *via* the Northern Pacific line to Portland, Or., we shall make another halt, with headquarters at the splendid "Portland," first taking a side trip to the Dalles of the Columbia, in order to view the matchless scenery of that great river. Leaving Portland, we shall proceed over the Southern Pacific Company's Overland line to California, passing by rail the entire distance through the magnificent scenic regions of the upper Willamette, the Siskiyou Mountains, the Mount Shasta district, and the upper Sacramento. In San Francisco there will be a sojourn at the Palace Hotel, with subsequent visits to San Rafael, Santa Cruz, and San Jose. An excursion will be made from San Jose to the summit of Mount Hamilton.

After completing the round of Central California resorts, the party will proceed southward by the Southern Pacific Company's Railroad line to Santa Barbara, Los Angeles, Pasadena, and San Diego. The tickets will permit the holders to remain at San Francisco, Santa Cruz, or other points, before proceeding to Southern California, and also to extend the stay through the winter, if desired, either in Central California or at Pasadena or other Southern California points.

The programme date for leaving Southern California is Wednesday, December 3, when the party will take its departure by the Atchison, Topeka & Santa Fe line; but passengers who prolong their stay on the Pacific Coast may avail themselves of subsequent dates to travel with a party, or may go independently on any train. The homeward route will be through Arizona, New Mexico, Colorado, and Kansas, with stops at Santa Fe and Las Vegas Hot Springs; from Kansas City over the Chicago, Rock Island & Pacific Railway to Blue Island Junction (and Chicago if desired); and thence *via* the Chicago & Grand Trunk, the Great Western Division of the Grand Trunk, the West Shore, and the Hoosac Tunnel and Fitchburg lines. A visit will be paid to Niagara Falls, and Boston will be reached on the morning of Friday, December 12.

W. RAYMOND.
I. A. WHITCOMB.

The full descriptive circular and all other information desired can be obtained of

W. RAYMOND, 296 Washington St. (opposite School St.), Boston, Mass.

A GRAND AUTUMN TRIP

TO

SOUTHERN CALIFORNIA,

BY A DIRECT AND EXPEDITIOUS ROUTE.

The Return Tickets by Four Different Routes, Good for Six Months.

Date of leaving Boston, Monday, October 13.

In addition to our two autumn excursions to the Pacific Coast over the Northern Pacific Railroad, we shall have a trip to Southern California over the direct line of the Atchison, Topeka & Santa Fe Railroad, the date of departure being Monday, October 13. This excursion is intended for persons who desire to reach Southern California by a direct route and as expeditiously as may be consistent with perfect comfort. The halts by the way are intended for rest, and will comprise a stay at Chicago from Wednesday morning until Thursday afternoon, and a sojourn at Las Vegas Hot Springs over Sunday. Pasadena, Los Angeles, Riverside, San Diego, Santa Monica, Santa Barbara, and other points in Southern California will be reached on the ninth day, and San Francisco the day following. The trip will be carried out upon the same plan that has made our winter excursions of the past few years so acceptable and popular, and ticket-holders will possess all the advantages given in connection with the later excursions in the season of 1890–91. The tickets supply every needed comfort during the transits to and from California, including sleeping-car accommodations, meals, transfers, and board at hotels, but leave the holders to dispose of their time in California in accordance with their own preferences. Hotel coupons, which supply board at the leading hotels at reduced rates, may be availed of for the whole or a part of the time, if desired; and our excursions to Mexico, the Sandwich Islands, and elsewhere, which are to take place in the course of the season, may also be included. The return tickets are good for six months, and the purchaser can journey eastward by any of four different routes, making his selection when he applies for his ticket. There will be returning excursions under personal escort over all these routes, and the tickets are equally good for independent use on any train, insuring in all cases first-class accommodations and privileges. With every ticket there are coupons enabling the holder to visit many of the leading health and pleasure resorts of California, including not only Pasadena and Los Angeles, but also San Diego, Riverside, Santa Monica, Santa Barbara, San Francisco, San Rafael, Santa Cruz, San Jose, and the summit of Mount Hamilton. These may be used at any time during the season, so that the holder can move about from place to place as circumstance and individual taste may dictate.

The return routes are as follows: Route A, Atchison, Topeka & Santa Fe line; Route B, Union Pacific line; Route D, Denver & Rio Grande line; Route E, Southern Pacific Company's Oregon line to Portland, and thence over the Northern Pacific Railroad. There will be a number of returning parties under personal escort by each of these routes.

W. RAYMOND.
I. A. WHITCOMB.

Descriptive circulars, tickets, and all required information regarding the excursion may be obtained of

W. RAYMOND, 296 Washington St. (opposite School St.), Boston, Mass.

A SERIES OF

THIRTY SUMMER TRIPS

During the Months of July and August

TO THE

Leading Resorts of New England, the Middle States, and Canada.

THERE will be a series of thirty attractive tours to the leading spring, mountain, river, and seashore resorts of the East during the months of July and August. Many famous centres of summer travel, a diversity of picturesque routes, and numerous places of historic importance are included in our present list, such as the White and Adirondack Mountains; the Hudson, St. Lawrence, and Saguenay Rivers; Lakes George, Champlain, Memphremagog, Placid, and Moosehead; Saratoga, Niagara Falls, Trenton Falls, the Lehigh valley, Wyoming valley, the romantic Keene valley in the Adirondack Mountains, Watkins Glen, the Thousand Islands, the Isles of Shoals, Mount Desert, Old Orchard Beach, and Newport, R. I. One party will make a complete tour through the most picturesque and historically interesting sections of the Maritime Provinces, visiting the capitals, leading cities, and most famous resorts of

New Brunswick, Nova Scotia, Cape Breton Island, and Prince Edward Island. There is a numerous array of low-priced tours. These, it should be added, are carried out with all the care and elaborateness of detail that have made our excursions in previous years so markedly popular. They have been arranged with a view to meeting the wishes of a large number of our patrons who find it inconvenient to absent themselves from home or business ties for the time required in the longer excursions, or who desire to make a short tour, occupying only a part of their vacation season.

Send for special circular of "Thirty Summer Trips."

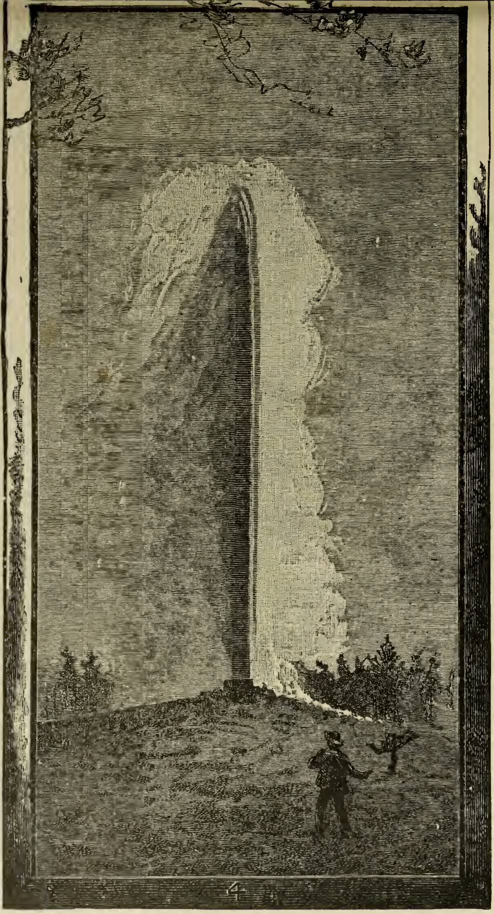
W. RAYMOND, 296 Washington Street (opposite School Street), Boston, Mass.

ANNUAL WINTER TRIPS TO CALIFORNIA,

AND

TOURS THROUGH MEXICO.

Particulars regarding our annual series of Winter Trips to California for the season of 1890-1891, and also our seventh annual series of Tours through Mexico, will be announced at an early date.



"Old Faithful" Geyser, Yellowstone National Park.